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ABSTRACT

In an effort to identify the minimum qualifications necessary for an entering student to succeed in a selective admission Nursing Program at Saint Petersburg Junior College in Florida, a study was conducted of 424 generic nursing students who started the program in January 1988, August 1988, January 1989, and August 1989. A successful student was defined as one completing the Nursing Program in four semesters and passing the Florida Licensing Examination for Registered Nurses (NCLEX-RN) on the first attempt. The predictor variables examined were grade point average (GPA) at admission; Multiple Assessment Programs and Services (MAPS) placement test scores; final grades in selected mathematics, English, and science courses; and GPA's for selected courses. Study findings, based on a multiple regression analysis, included the following: (1) 60.6% of the students in the study completed the program in four semesters, while another 20.1% completed the program by the end of spring 1992; (2) 62.5% of the total student cohorts passed the NCLEX-RN on the first attempt; (3) pre-admission predictors of successful program completion included a final grade in Human Anatomy and Physiology II (a pre-admission requisite) greater than or equal to B, and a GPA in general education science courses greater than 2.6; and (4) pre-admission predictors for the successful completion of the NCLEX-RN on the first attempt included MAPS reading score greater than 38, and a final grade in the Microbiology Laboratory course of B or better and/or a GPA in general education science courses greater than 2.6. Extensive appendixes contain the research proposal and detailed data tables. (PAA)

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NURSING PREDICTORS STUDY

PHASE ONE

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St. Petersburg Junior College
Institutional and Program Planning
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NURSING PREDICTORS STUDY

EXECUTIVE SUMMARY

The Limited Enrollment Health Program Admissions Task Force was created by Dr. Carl Kuttler and charged with the responsibility of identifying the minimum qualifications necessary for a student to succeed in a selective admissions program. The Office of Institutional Research worked jointly with staff in the Nursing Program to develop a research design that would identify factors to predict success in the Nursing Program as measured by program completion and passing the state licensing examination. The study would be conducted in two phases in order to report to the Task Force in a timely manner. This is the result of Phase One of that study.

The objectives of Phase One were to provide demographic data about the generic nursing students who started the program in January 1988, August 1988, January 1989 or August 1989 and to identify academic variables of those entering students that would predict success in completing the Nursing Program in four semesters and passing the NCLEX-RN test on the first attempt. Cohorts, rather than classes, were used with starting dates as the common element identifying the four cohorts.

A total of 424 students were included in the four cohort start groups. For all cohort groups the mean age of students was under 30 years of age and the majority of students were white females. The percentage of students completing the program in four semesters was 60.6% with another 20.1% completing in five or more semesters by the end of Spring 1992. Calculated as the percent of the total student cohorts rather than the total students sitting for the NCLEX—RN examination, the percentage of students passing on the first attempt was 62.5%.

The independent variables were: GPA at admission, placement (MAPS) test scores, first attempt grades in selected mathematics, English and science courses, and GPA's in selected courses. The dependent variables were: (1) number of semesters to complete the Nursing Program and (2) pass/fail NCLEX-RN on first attempt. The study required statistical tests to be run on data from first three cohort start groups and validated by data from the last cohort start group. Multiple regression was used to produce equations that would predict pass/fail of the NCLEX-RN examination on the first attempt and program completion in four semesters. Although there was a large percentage of variation explained by the variables identified in each equation, there were a low number of student cohorts on which these results were based and attempts at validation of the models were unsuccessful. The equations were based on a low number because if data for any available

predictor variable selected for the equation had missing data, all information for that cohort student was eliminated from the analysis. An adjustment was made to the selection of course data to include grades previously excluded from the calculations and to use final rather than first attempt grades. Increasing the sample size would improve the chances of validating equations derived from multiple regression.

Following the adjustments to the data, multiple regression analysis was used to develop equations to predict pass/fail of the examination and program completion. The combination of predictor variables, MAPS reading score and final grade in MCB 2010L (Microbiology Lab) were those most likely to accurately predict successful passing or failing the examination. Although there was some improvement in developing an equation to predict those students who would pass the NCLEX-RN on first attempt, there was little or no improvement in predicting completion rates when final grades were used in the analysis in place of first attempt grades. The best equations for passing the exam on first attempt and completion time were based on at least three times as many observations (students) as the previous analysis but only represented 23.5 percent of the 294 students. Limitations with the data (missing MAPS scores, changing course requirements, including only general education courses, etc.) also contributed to this outcome.

The analysis of students viewed as being "unsuccessful" by this study (i.e. those who dropped out of the program or took 5 semesters or more to complete the program or failed the licensing exam on the first attempt) revealed a possible alternative to a strict "equation" approach. If "successful" students were viewed as those who complete the program without regard to length of time to complete program and who pass the licensing exam on first attempt, the following tests and/or courses could be used in conjunction with other methods to screen or to identify early those students who would be less likely to complete the program. The difference between this method and a regression equation is that a regression equation assigns weights for each variable while this approach does not. These scores/courses are recommended for use in determining admission to the Nursing Program, only if they are required prior to acceptance into the program.

<u>For Completing the Program</u>:

-Final Grade in APB 1812 greater than or equal to B.

-GPA in General Education Science Courses greater than 2.60

<u>For Passing the NCLEX-RN on First Attempt</u>:

-MAPS Reading score greater than 38.

-Final Grade in MCB 2010L greater than or equal to B

(and/or)

-GPA in General Education Science Courses greater than 2.60

INTRODUCTION

The Limited Enrollment Health Program Admissions Task Force was created by Dr. Carl Kuttler and charged with the responsibility of identifying the minimum qualifications necessary for a student to succeed in a selective admissions program. As work progressed it became apparent that additional data were necessary in order for the Task Force to accomplish the objective. Accordingly, the Office of Institutional Research was requested to conduct a study that would identify factors that would predict success in the Nursing Program as measured by program completion and passing the state licensing examination. A research design (**Appendix I**) was developed jointly by staff in the Nursing Program and the Institutional Research Office. In order to report to the task force in a timely manner, the research design called for the study to be conducted in two phases.

PHASE ONE OBJECTIVES

The objectives of Phase One of the nursing study were twofold:

- To provide demographic information, namely gender, age, and ethnic group, about the generic nursing students who started the nursing program in January 1988, August 1988, January 1989, or August 1989 for all students.

- To identify those academic variables of students entering the Nursing Program that would predict student success in completing the Nursing Program in four semesters and passing the NCLEX-RN test on the first attempt.

This study tracked students who began the Nursing Program in January 1988, August 1988, January 1989 or August 1989 only. Cohorts, rather than classes, were used with starting dates as the common element identifying the four cohorts. This means that no attempt was made to track those students who replaced students

from the cohort who dropped out of the Nursing Program. In order to make the predictions, the statistical procedure of Multiple Regression Analysis was used to test the following two null hypotheses:

1. Student GPA at admission, admission test scores (MAPS) and first attempt grades in selected science, mathematics, and English courses will not significantly predict completion of the Nursing Program in four semesters.

2. Student GPA at admission, admission test scores (MAPS) and first-attempt grades in selected science, mathematics, and English courses will not significantly predict passing the NCLEX-RN on first attempt.

This study required statistical tests to be run on data from the January 1988, August 1988, and January 1989 cohort start groups and validated by data from the August 1989 cohort start group. Thus, any variables found to significantly predict student success in the Nursing Program and/or on the licensing examination would be tested for credibility before a model was recommended for use for admission purposes.

STUDENT DEMOGRAPHICS

A total of 424 students were included in the four cohort start groups. The number of students in each cohort group was as follows:

Class Start Date	Number of Students
January 1988	94
August 1988	94
January 1989	106
August 1989	130

The sum of students in the first three selected class start dates numbered 294. Since results derived from the August 1989 cohort start group, which numbered 130, was to be used to validate results from the January 88, August 88 and January 89 cohort of students, it was desirable that the groups shared similar characteristics. The

following tables describing the groups are designed to show the sum of the characteristics of the January 1988, August 1988, and January 1989 cohort groups compared to the August 1989 cohort group.

Description of Cohort Start Groups

1. Age

Selected demographics for all cohort groups were studied. Table 1 shows the number and percent of students by age group. For the January 1988 cohort, 62.8% of students enrolled in the Nursing Program were under 30 years of age. The percent of students under 30 years declined in each succeeding cohort start group. In the August 1989 cohort slightly less than half (49.3%) of the students were under 30 years. On the other hand, the mean age of students for all cohort groups was 30 years. The mean, a numerical value that is used to describe the average of an entire sample, is generally considered the best measure of central tendency. A t-test was conducted to determine the equality of the mean age of 29.68 years for the January 1988, August 1988 and January 1989 cohorts and the mean age of 30.81 for August 1989. Results of this test indicated that there was a significant difference between those cohorts starting the program in August 1989 and those with earlier starting dates. However, since age was not used to predict results, this is not critical. Computing the mean is one of the initial steps in applying many statistical procedures.

A range of 17 to 57 years of age indicated that students may have entered directly from high school or may have entered with another degree or nursing-related work experience. A range of 18 to 52 years for the August 1989 cohort may be compared to the range of 17 to 57 years of age for the sum of the first three groups.

TABLE 1
Distribution by Age

	Jan. '88		Aug. '88		Jan. '89		Sum 1+2+3		Aug. '89	
Age Group	#	%	#	%	#	%	#	%	#	%
19 & under	12	*12.8%*	7	*7.4%*	8	*7.5%*	27	*9.2%*	8	*6.2%*
20-24	26	*27.7%*	17	*18.1%*	23	*21.7%*	66	*22.4%*	26	*20.0%*
25-29	21	*22.3%*	31	*33.0%*	28	*26.4%*	80	*27.2%*	30	*23.1%*
30-39	22	*23.4%*	22	*23.4%*	32	*30.2%*	76	*25.9%*	45	*34.6%*
40-49	12	*12.8%*	15	*16.0%*	14	*13.2%*	41	*13.9%*	18	*13.8%*
50-59	1	*1.1%*	2	*2.1%*	1	*0.9%*	4	*1.4%*	3	*2.3%*
Total	94		94		106		294		130	

2. Ethnicity

Table 2 shows the ethnic distribution by cohort group. Taken as a whole, 89.4% of the student cohorts were white, 5.9% were black, and 4.7% were of other ethnic origins.

TABLE 2
Distribution by Ethnicity

	Jan. '88		Aug. '88		Jan. '89		Sum 1+2+3		Aug. '89	
Ethnicity	#	%	#	%	#	%	#	%	#	%
White	83	*88.3%*	82	*87.2%*	96	*90.5%*	261	*88.8%*	118	*90.8%*
Black	4	*4.2%*	10	*10.6%*	4	*3.8%*	18	*6.1%*	7	*5.3%*
Hispanic	3	*3.2%*	1	*1.0%*	2	*1.9%*	6	*2.0%*	2	*1.5%*
Asian	3	*3.2%*	1	*1.0%*	2	*1.9%*	6	*2.0%*	1	*0.8%*
Am. Indian	1	*1.0%*	0	*0.0%*	0	*0.0%*	1	*0.3%*	2	*1.5%*
Other	0	*0.0%*	0	*0.0%*	2	*1.9%*	2	*0.7%*	0	*0.0%*
Total	94		94		106		294		130	

3. Gender

Table 3 shows the distribution by gender for each cohort group. Taken as a whole, 80.2% of the student cohorts were female, 19.8% were male.

TABLE 3
Distribution by Gender

	Jan. '88		Aug. '88		Jan. '89		Sum 1+2+3		Aug. '89	
Gender	#	%	#	%	#	%	#	%	#	%
Male	21	*22.3%*	15	*16.0%*	24	*22.6%*	60	*20.4%*	24	*18.5%*
Female	73	*77.7%*	79	*84.0%*	82	*77.4%*	234	*79.6%*	106	*81.5%*
Total	94		94		106		294		130	

4. College Entrance

Students who take all their college courses at the same college are called native students. Those who take courses at more than one college are called transfer students. Table 4 shows the number and percent of native SPJC students and transfer to SPJC students by starting cohort group. Approximately 58 percent of all four cohort groups were transfer students. Approximately 55% of females were transfer students while over 71% of male students entered by this route. Since 46% of the transfer students have at least one college placement score, it appears that many of these students have taken most of their courses at SPJC.

TABLE 4
Distribution of SPJC Native and SPJC Transfer Students

	Jan. '88		Aug. '88		Jan. '89		Sum 1+2+3		Aug. '89	
	#	%	#	%	#	%	#	%	#	%
Native	45	*47.9%*	35	*37.2%*	36	*34.0%*	116	*39.5%*	60	*46.2%*
Transfer	49	*52.1%*	59	*62.8%*	70	*66.0%*	178	*60.5%*	70	*53.9%*
Total	94		94		106		294		130	

Description of Cohort Start Group Achievements

1. Semesters for Program Completion

Table 5 shows the number and percent of students in each cohort start group who completed the Nursing Program in four semesters and five or more semesters. The percentage of students

completing the nursing program in the preferred four semester sequence for all cohorts was 60.6%. Another 20.1% of total cohorts had completed the nursing program in five or more semesters by the end of Spring 1992 with the remaining 19.3% of all cohorts dropping out of the program or failing to complete the program by that date.

TABLE 5
Distribution by Semesters Required to Complete Program

	Jan. '88		Aug. '88		Jan. '89		Sum 1+2+3		Aug. '89	
Semesters to Complete	#	%	#	%	#	%	#	%	#	%
Four	58	*61.7%*	56	*59.6%*	65	*61.3%*	179	*60.9%*	78	*60.0%*
Five or more	19	*20.2%*	19	*20.2%*	18	*17.0%*	56	*19.0%*	29	*22.3%*
Other*	17	*18.1%*	19	*20.2%*	23	*21.7%*	59	*20.1%*	23	*17.7%*
Total	94		94		106		294		130	

*Students may have left the program or are continuing to work toward the degree but had not graduated by the end of Spring semester

2. Results of Licensing Examination

Table 6 shows the number and percent of students in each cohort start group that successfully passed the NCLEX-RN licensing examination on the first attempt without regard to the number of semesters required to complete the Nursing Program. The percentage of students passing the examination on the first attempt was 62.5%. Two students have completed the nursing program but will not sit for the exam until this summer. The passing rates were calculated as percent passing on first attempt of the total student cohorts rather than as a percent of the total students sitting for an exam. For that reason, passing rates reported here are lower than one might expect. (Note: These were the results of those students who sat for the exam in Florida only.)

TABLE 6
Distribution by NCLEX-RN First Attempt Results

First Attempt	Jan. '88 #	Jan. '88 %	Aug. '88 #	Aug. '88 %	Jan. '89 #	Jan. '89 %	Aug. '89 #	Aug. '89 %	All Cohorts #	All Cohorts %
Passed	60	*63.8%*	47	*50.0%*	70	*66.0%*	88	*67.7%*	265	*62.5%*
Failed	17	*18.1%*	28	*29.8%*	12	*11.3%*	18	*13.8%*	75	*17.7%*
Grad/No Exam					1	*0.1%*	1	*0.1%*	2	*0.0%*
Other*	17	*18.1%*	19	*20.2%*	23	*21.7%*	23	*17.7%*	82	*19.3%*
Total	94		94		106		130		424	

*Students may have left the program or are continuing to work toward the degree but had not graduated by the end of Spring semester.

3. Student Success

A successful student, as defined in this study, was expected to complete the Nursing Program in four semesters and to pass the NCLEX-RN examination on the first attempt. 214 out of 424 students met this goal. This means that for the four cohorts considered here, only 50.5% would be defined as "successful" nursing students by this study. Table 7 shows by age, ethnicity and gender the number and percent of students who meet this goal for all cohort groups. **Appendix II** shows this data by cohort starting date. Two hundred fourteen (214) or 83.3% of the 257 students who completed the program in four semesters also passed the licensing exam on the first attempt.

The percentage of student cohorts completing the program in four semesters and the licensing examination on the first attempt was lowest in the respective age, ethnic and gender groups for those under 19 years of age (63.6%), for blacks (62.5%) and for males (76.0%). If one disregards the number of semesters to complete the program, the percentage passing the licensing exam on first attempt was lowest for students 40-49 years of age, blacks and males. While a larger percentage of 40-45 year old students (80%) completed the program in 4 semesters in the August 1988 cohort, a larger percent (53%) of these students also failed the licensing exam on the first attempt (see **Appendix II**).

TABLE 7
ALL COHORT STUDENTS PASSING NCLEX-RN ON FIRST ATTEMPT BY NUMBER OF SEMESTERS TO COMPLETE NURSING PROGRAM

	Program completed in 4 Semesters		Program completed in 5 or more semesters		All students completions*	
Age Group	#	%	#	%	#	%
19 and under	14	63.6%	8	36.4%	22	62.9%
20-24	51	79.7%	12	18.8%	63	68.5%
25-29	56	83.6%	11	16.4%	67	61.0%
30-39	65	81.3%	15	18.8%	80	66.1%
40-49	24	82.8%	5	17.2%	29	49.2%
50-59	4	100%	0	0.0%	4	57.1%
Total	214	80.5%	51	19.2%	265	62.5%
Ethnic Group						
White	198	81.1%	46	18.9%	244	64.4%
Black	5	62.5%	3	37.5%	8	32.0%
Hispanic	5	83.3%	1	16.7%	6	75.0%
Asian	4	80.0%	1	20.0%	5	71.4%
Am. Indian	1	100%	0	0.0%	1	33.3%
Other	1	100%	0	0.0%	1	50.0%
Total	214	80.8%	51	19.2%	265	62.5%
Gender						
Male	38	76.0%	12	24.0%	50	59.5%
Female	176	81.9%	39	18.1%	215	63.2%
Total	214	80.8%	51	19.2%	265	62.5%

*Percentages in this column are of all students who are of the particular age, ethnic or gender category.

Entering Academic Record of Cohort Start Groups

1. Placement Tests

Degree seeking students who enter SPJC are required to complete a college placement test. SPJC uses the Multiple Assessment Programs and Services (MAPS) as their placement test. The battery consists of a reading test, a written English test, and a

mathematics test of three parts: arithmetic, elementary algebra, and intermediate algebra. Additionally, the college requires a written essay.

MAPS scores were available for slightly more than one-half of the students in the cohort start groups. Of those available, the MAPS scores for an additional ten students were eliminated because they represented grades on a prior version of the test battery. The meager number of student cohorts with MAPS scores would impact any regression analysis which would use placement scores as a predictor of program success by eliminating almost one-half of the student cohorts from the analysis. The missing scores are explained in part by the number of transfer students in the program. When transfer students enter with college level courses completed in the areas tested by MAPS, they are not required to complete the MAPS battery. A review of the available scores, however, showed that the mean MAPS score of 27 for the arithmetic subtest was favorable compared to the maximum score of 35 but the mean MAPS score of 12.9 on the elementary algebra subtest and of 4.31 on the intermediate algebra subtest compare less favorably with maximum scores of 35 and 30, respectively. Minimum and maximum MAPS scores are available by age, ethnic and gender category by starting date in **Appendix III**.

2. Admission GPA

At time of application to the Nursing Program the most recent student GPA is identified. This number can be either high school GPA or the GPA of college courses taken prior to application to the program. Table 8 shows the distribution of student admission GPA by cohort group. The admission GPA increased over these starting dates and averaged 2.76 for the four cohorts. Those students admitted with a high school GPA (N = 68) averaged 2.55, while those admitted with a college GPA (N = 339) averaged 2.80. There appears to be no difference in GPA between ethnic category or gender, but the GPA of students older than 30 years of age tends to be higher than those of younger students on average. This detail as well as minimum and maximum GPA by starting date can be found in **Appendix IV**.

TABLE 8
Distribution by Entering GPA

	Jan. '88		Aug. '88		Jan. '89		Sum 1+2+3		Aug. '89	
GPA	#	%	#	%	#	%	#	%	#	%
Under 2.00	7	*7.40%*	4	*4.3%*	0	*0.0%*	11	*3.7%*	0	*0.0%*
2.00-2.50	30	*31.9%*	31	*33.0%*	30	*28.3%*	91	*31.0%*	31	*23.8%*
2.51-3.00	34	*36.2%*	27	*28.7%*	39	*36.8%*	100	*34.0%*	53	*40.8%*
3.01-3.50	15	*16.0%*	18	*19.1%*	20	*18.9%*	53	*18.0%*	31	*23.8%*
Over 3.50	3	*3.2%*	9	*9.6%*	13	*12.3%*	25	*8.5%*	12	*9.2%*
Missing GPA	5	*5.3%*	5	*5.3%*	4	*3.8%*	14	*4.8%*	3	*2.3%*
Total	94		94		106		294		130	

3. Courses at Admission

Students generally entered the program after completing several college level courses. Often these were the SPJC general education courses or comparable courses from other institutions. The average (mean) credit hours earned prior to program admission was 42.8.

Phase I of the study required a review of first attempt grades by student cohorts in designated science, mathematics and English courses to determine whether or not these grades would predict completion of the Nursing Program in four semesters and passing of the NCLEX-RN on first attempt (Note: A listing of all the courses by name and number is included in **Appendix V.**). Since only first attempt grades were selected for each course required before receiving a degree, only A (4), B (3), C (2), D (1), and F (0) grades were given a value in statistical calculations. The following grades were not given a value in the calculations: S (satisfactory), X (audit), I (incomplete), and W (withdrawal) as well as Alternate Satisfaction (student completed course at another college or showed knowledge by other means) and CLEP (course credit given based on passing score on exam). Therefore, when a student received one of these grades on first attempt in a course, the calculations processed the grade in the same way as a student who did not take the course was processed. This means students receiving these grades, as well as students who did not take a course and consequently had no grade, were excluded from any regression analysis based on courses.

Appendix VI shows an analysis of the course grades for each cohort group by age, ethnicity and gender.

Reading. Only 72 of the 424 student cohorts took the Basic Reading Skills course, REA 9000. Of those that took REA 9000, only 62 or 14.6% had a first attempt grade of A, B, C, D, or F. The few scores in this course was cause for excluding this variable from further analysis.

Mathematics. The required general education mathematics course for the January 1988, August 1988, and January 1989 cohort groups was Introductory Mathematics With Applications, MGF 1119; for the August 1989 cohort group it was Topics in College Mathematics I, MGF 1113. Thirty-one students had taken both courses. Since the requirement changed and some students had grades for both courses, a mathematics GPA was constructed. If a grade appeared for MGF 1113, it was used; if not, the grade for MGF 1119 was used. Two hundred sixty-seven (267) student cohorts had a mathematics GPA. Of the remaining 133 students cohorts without a mathematics GPA, most had received an S as a grade in their mathematics course.

English. The Nursing Program permits a student to choose between two English sequences: Composition I and II, ENC 1101 and ENC 1102, or Communications I and II, ENC 1151 and ENC 1152. Since students have a choice, no one sequence of courses could be used in a regression analysis. Again, an English GPA was constructed. Three hundred eighty-nine (389) students had an English GPA.

A review of the mean grades for student cohorts for the two sequences showed that the means increased for the ENC 1101/ENC 1102 sequence but decreased for the ENC 1151/ENC 1152 sequence. Of the students that had a grade other than A, B, C, D, or F on the first attempt, the majority were W (withdrawals).

Science. Most of the student cohorts had a grade on the first attempt for the required science courses with the exception of Human Anatomy and Physiology and Human Anatomy Physiology Laboratory, APB 1190 and APB 1190L. This may be explained by the fact that currently there are two courses that are required in human anatomy, Human Anatomy & Physiology I and Human Anatomy & Physiology II, APB 1811 and APB 1812, plus the corresponding laboratory courses. Table 9 shows the number of student cohorts with an A, B, C, D, or F grade compared to those students with a grade

that had no credit in the calculations or did not take the course. For students with first attempt grades, the majority of the grades that were not A, B, C, D, or F were S, W, or X for APB 1811, APB 1812 and APB 1812L; S or W for APB 1811L; and W for MCB 2010 and MCB 2010L.

A science GPA was constructed for consistency of calculations with English and mathematics. A science GPA was obtained for 404 or 95.3% of the student cohorts. The mean grade for the science GPA and for all science courses except APB 1811L and APB 1812, rose from the January 1988 to the August 1989 cohort group.

TABLE 9
First Attempt Grades in Science Courses

	Grade A - F	Other*
APB 1811	329	95
APB 1811L	320	104
APB 1812	295	129
APB 1812L	280	144
APB 1190	40	384
APB 1190L	37	387
MCB 2010	317	107
MCB 2010L	324	100

* Grade other than A, B, C, D, F or did not take the course

PREDICTION OF STUDENT SUCCESS

Comparison of Cohort Start Groups

The research design specified that results of statistical tests for data from the January 1988, August 1988, and January 1989 cohort start groups would be validated by data from the August 1989 cohort start group. This means that the predicted results for the August 1989 cohort would be compared to their actual results.

In order to test whether or not the cohort start groups were alike, a statistical test was run to compare the mean for each

independent variable in the sum of the first three cohort start groups to the fourth cohort start group. The independent variables were: student GPA at admission, test scores on placement tests (MAPS), and first attempt grades in selected science, mathematics and English courses. The *t* -test was used to determine whether the group means differed significantly from one another. If the mean of a variable from the sum of the first three cohort start groups was significantly different from the August 1989 cohort group, the variable's usefulness as a predictor would be limited because the values could be outside the original analysis. This means, for example, if a student scored 10 on the MAPS math test and the range of scores, upon which a predictive equation was determined, was 15 to 30, one could not make assumptions about how well this particular student would perform.

There was no difference in the means for most of the MAPS tests, for the English, mathematics or science GPA and many of the courses in the general education curriculum. This signifies that for these independent variables, both means came from the same population or that an equation using these variables would yield similar results for both groups. However, the mean was significantly different between the two groups for the following independent or predictor variables: GPA at admission, MAPS Essay, MGF 1113 grade, MCB 2010 grade, and MCB 2010L grade. Since these means were significantly different, their use as predictor variables would be limited.

Correlation

The correlational method is used for two major purposes: (1) to explore relationships between two variables and (2) to predict one variable from another variable. Correlation coefficients measure the degree of relationship between two variables in mathematical terms. If for each increment of increase in one variable there is a corresponding increment of increase in another, the relationship is positive and the correlation coefficient will be 1.00. If for each increment in one variable there is a corresponding reduction in another, the relationship is negative and the correlation coefficient will be -1.00. If there is no relationship, the coefficient will be zero. If two variables are somewhat related, the coefficients will have a value between zero and +1.00 or between zero and -1.00. The higher

the correlation, the more systematic and dependable the relationship between the variables, whether it is positive or negative.

As part of the analysis, correlation coefficients were derived for all independent (predictor) variables (GPA at admission, placement (MAPS) test scores, first attempt grades in selected mathematics, English and science courses, and GPA's in selected courses) and the two dependent variables for the 294 students in the January 1988, August 1988 and January 1989 cohort groups. The dependent variables were: (1) number of semesters to complete the Nursing Program and (2) pass/fail NCLEX-RN on first attempt.

Table 10 shows the independent (predictor) variables that had the highest correlation (R) with the two dependent variables. Since a negative correlation coefficient means as one variable increases the other decreases, the ENC 1152 correlation coefficient of - .35 means as the number of semesters to complete the program increases, the grade in ENC 1152 decreases. The .40 correlation coefficient for REA 9000 means, as the grade in REA 9000 increases, the chances of passing the NCLEX-RN examination increases.

TABLE 10
Correlation Between Predictor and Dependent Variables

Dependent Variables	Independent Variables	Correlation (R)
Number of Semesters for Program Completion	ENC 1152 (n=42)	-.35
	APB 1812L (n=195)	-.32
	APB 1812 (n=197)	-.27
	MCB 2010L (n=205)	-.21
	Science GPA (n=235)	-.20
Pass/Fail NCLEX-RN	REA 9000 (n=37)	.40
	MGF 1113 (n=26)	.29
	MAPS Math (n=114)	.25
	MCB 2010L (n=205)	.23
	MAPS Reading (n=127)	.22

Multiple Regression

1. Description of Multiple Regression

In prediction studies the statistical analysis of multiple regression is often used to determine whether two or more of the independent or predictor variables in the study can be combined to predict the dependent variable or criterion better than any one predictor variable does alone. Unlike correlation, it is not restricted to linear relationships among the variables. The multiple regression equation uses values on two or more independent (predictor) variables to predict the value of another variable (criterion).

The first step in multiple regression is usually to compute the correlation between the best predictor and the criterion variable. This procedure yields a multiple correlation coefficient (R). The value of R will vary depending on which predictor variables have been entered in the analysis and the order in which they have been entered. If R is squared, it will yield a statistic known as the coefficient of determination. R-square expresses the amount of variance in the criterion that is predictable from a predictor variable or combination of predictor variables. There are two tests of significance applied to the R-square. The first determines whether R square is significantly different than zero. The second determines whether the R-square increment is statistically significant.

The mathematical basis for multiple regression is an equation that links the predictor variable(s) to the criterion variable. The computer program for multiple regression will search the pool of predictor variables and select the one that best predicts the criterion. The second predictor variable is chosen on the basis of how well it improves upon the prediction achieved by the first variable rather than on the basis of its correlation with the criterion. The second predictor should correlate as little as possible with the first predictor variable in order to avoid the possibility that it will predict the same variance in the criterion variable as the first variable. Additional predictors entered in the multiple regression equation are determined by whether they improve upon the prediction made by the first two predictors. No variables are selected by the program unless at least one is significant in predicting the variation in the dependent variable. At each stage, variables previously selected may be dropped if the combination of variables excluding this variable produce a higher R-square. This process ends when there

are no additional variables that will add to the R-square. The result is an equation that links the predictor variable(s) (X's) to the criterion variable (Y) such as:

$$Y = b_1X_1 + b_2X_2 + b_3X_3 + c$$

Each *b* value in the multiple regression equation is a regression weight which can vary from -1.00 to +1.00. When a student's values on the predictor variable(s) are multiplied by their respective regression weights and then summed and added to c, the intercept or constant, the result is the best possible prediction of the student's value for the criterion variable.

The goal of multiple regression is to determine an equation that yields the "highest" R-square using the "least" number of variables.

2. Multiple Regression Equation for Pass/Fail NCLEX-RN

Stepwise regression was used to perform the multiple regression analysis in this study. This process requires a pool of independent variables to be identified that the computer program will consider to be added to or dropped from the multiple regression equation. Each predictor variable was added one at a time into the pool of variables from which the program could select. They were included in the pool of variables on the basis of correlation with the dependent variable.

The highest R-square achieved using this method was approximately .30. Because R-square measures the amount of variance in the criterion (dependent) variable that is predictable from the independent (predictor) variable or combination of independent (predictor) variables, it is a stronger statistic than R.

The stepwise process was repeated using another approach. Variables were entered into the pool of predictor variables by selecting those with the fewest missing observations. This effort produced an equation which offered the highest R-square (.76) for determining success on the NCLEX-RN exam. A test of significance was applied to the equation to determine whether the selected variables could be used to accurately predict pass or fail for those student cohort scores/grades used in the analysis. The test showed significance at the .001 level of confidence (F = 15.41). This suggests

that we can be 99.9% sure that the predictor variables may be used to accurately predict pass/fail for those student cohorts included in the analysis. The equation derived in this analysis was based on values for 18 of 294 possible student cohorts or only 6.2% of the total.

In order to validate the results, the equation was used to predict the passing rate of the students in the August 1989 cohort group. A correlation between the predicted and actual values was calculated. The correlation of R = .14 showed there was very little correlation between predicted and actual student cohorts who passed the examination on first attempt. Validation of the equation to establish criteria for admission to the Nursing Program was not possible.

3. Multiple Regression Equation for Program Completion

The same steps that were taken to develop the multiple regression equation for pass/fail of the licensing examination were used to determine an equation for program completion. Stepwise regression was used. Variables were entered into the pool of predictor variables by selecting those with the fewest missing observations. This effort produced an equation which offered the highest R-square (.68) for determining program completion.

A test of significance was applied to the equation to determine whether the variables could be used to accurately predict the time to complete the nursing program for those student cohorts whose scores/grades were used in the analysis. Again, the test showed significance at the .001 level of confidence (F = 11.74). One could be 99.9% sure that these predictor variables may be used to accurately predict program completion for those student cohorts included in the analysis. The equation derived in this analysis was based on 26 of 294 possible student cohorts or only 8.8% of the total.

In order to validate the results, the equation was used to predict the completion rates of students in the August 1989 cohort group. The predicted results were compared to the actual number of student cohorts who completed the program in 4 semesters or "5 or More" semesters. The correlation, R = .06, between the predicted and actual values showed there was very little correlation between predicted and actual student cohorts time to complete the program.

Validation of the equation to establish criteria for admission to the Nursing Program was not possible, and the inadequacy of the data suggested that we should not reject the null hypotheses at this time.

PHASE ONE CONCLUSIONS AND RECOMMENDATIONS

1. The purpose of the Phase I study was to identify those academic variables of student cohorts entering the Nursing Program that would predict success in completing the Nursing Program in four semesters and passing the NCLEX-RN test on the first attempt. The statistical analyses did not produce powerful enough evidence upon which to recommend criteria for admission to the Nursing Program.

   The analysis showed that there was a large percentage of variation explained by the variables identified in each equation. However, the low number of student cohorts on which these results were based and the unsuccessful validation of these models explain why these equations alone should not be used to admit students. The equations were based on a low number because if data for any available predictor variable selected for the equation had missing data, all information for that cohort student was eliminated from the analysis.

   A rule of thumb in multiple regression analysis is to increase sample size by at least 15 for each predictor variable used in the multiple regression equation. Using this rule, then, a multiple regression analysis involving three predictor variables would require a sample of at least 45 students.

2. An adjustment should be made to the selection of progression data identified in the research design (course data) in order to increase the amount of data for each student cohort. This would increase the sample size from which the multiple regression equations would be derived and perhaps improve the probability of their validation.

3. The Office of Institutional Research will repeat the statistical analyses making the following changes in the selection of course data:

Grades in all courses currently equal to S (Satisfactory), 0 (Course credit obtained through CLEP examination), and Alternate Satisfaction will be given credit in the calculations. Each grade will be given a value equal to C = 2.0 or the minimum acceptable grade that can be transferred to SPJC in each course.

The criteria for selection of course data was first attempt grades. This will change to final grade in each course. The effect of this criteria change will increase the amount of information for each student cohort by eliminating many of the W (Withdrawal), X (Audit), and I (Incomplete) grades.

These changes were reviewed and agreed to by staff in the Nursing Program. The following analysis describes results or changes to results when the recommended changes were incorporated into the data.

PHASE ONE-A ANALYSIS

Required General Education Courses

Appendix VII displays the final grade for each general education course by age, ethnicity and gender for each of the cohort starting dates. Comparing the number of students receiving the "Other" grade category as a final grade for every course to the total shown for first attempt grades in **Appendix VI** indicated that there was the desired improvement in the number of students with valid data for all variables, although the degree of improvement varied by course. The number of "Other" grades would include those students receiving an I (Incomplete) or X (Audit) grade and those students who did not attempt the course. When there was a change in the course required during the time period covered by this study, the number of "Other" grades remained high, since many students never attempted courses that were not a part of the required courses for their admission date.

Correlation

Correlation coefficients were derived for all independent (predictor) variables (GPA at admission, placement (MAPS) test

scores, final grades in selected mathematics, English and science courses, and GPA's in selected courses) and the two dependent variables for the 294 students in the January 1988, August 1988 and January 1989 cohort groups. The dependent variables were: (1) number of semesters to complete the Nursing Program and (2) pass/fail NCLEX-RN on first attempt.

Table 11 shows the independent (predictor) variables that had the highest correlation (R) with the two dependent variables. Since a negative correlation coefficient means as one variable increases the other decreases, the ENC 1152 correlation coefficient of - .40 means as the number of semesters to complete the program increases, the grade in ENC 1152 decreases. The .38 correlation coefficient for REA 9000 means, as the grade in REA 9000 increases, the chances of passing the NCLEX-RN examination on first attempt increases. Note that some of the variables are different from the Phase One analysis.

TABLE 11
Correlation Between Predictor and Dependent Variables

Dependent Variables	Independent Variables	Correlation (R)
Number of Semesters for Program Completion	ENC 1152 (n=45)	-.40
	ENC 1151 (n=43)	-.30
	APB 1812L (n=234)	-.29
	APB 1812 (n=234)	-.28
	Science GPA (n=235)	-.28
Pass/Fail NCLEX-RN	REA 9000 (n=38)	.38
	ENC 1151 (n=43)	.25
	MCB 2010L (n=233)	.25
	MAPS Reading (n=127)	.22
	MAPS Math (n=114)	.20

Multiple Regression Analysis

1. Multiple Regression Equation for Pass/Fail NCLEX-RN

Stepwise regression was again used to perform the multiple regression analysis in this study. Using the highest of the revised

correlation coefficients in Table 11, courses/scores were included in the pool of variables on the basis of correlation with the dependent variable, scores/courses with the smallest number of missing data and those variables with the lowest correlation with others already entered.

The highest R-square achieved using this method was approximately .17. The correlation matrix for all variables in the pool of variables to be selected may be found in **Appendix VIII**. Other variables, which could have been added to the pool, had high correlation with one of the included variables. This effort produced the following equation for determining success on the NCLEX-RN exam:

Y= .51 + .02 (MAPS READING SCORE)
+.15 (MCB 2010L(Final Grade))

In this equation, Y is the predicted outcome on the first attempt of the NCLEX-RN licensing examination. The combination of predictor variables, MAPS reading score and final grade in MCB 2010L, are those most likely to accurately predict successful passing or failing the examination. The final attempt grades used in the analysis were: A = 4, B = 3, C = 2, D = 1 and F = 0. In the equation if Y = 2 (or greater than or equal to 1.5), the student would be expected to pass; if Y = 1 (or less than 1.50), the student would be expected to fail.

A test of significance was applied to the equation to determine whether these variables could be used to accurately predict pass or fail for those student cohort scores/grades used in the analysis. The test showed significance at the .025 level of confidence (F = 6.71). This means that we can be 97.7% sure that these predictor variables may be used to accurately predict pass/fail for those student cohorts included in the analysis. The R-square could have been improved with the addition of REA 9000 and ENC 1151, but the number of students with valid grades in these courses remained small. Including REA 9000 in the previous model, when first attempt grades were being used, resulted in a higher R-square but was applicable to a fewer number of students. The equation derived in this analysis was based on 69 of 294 possible student cohorts.

In order to validate the results, the equation was used to predict the passing rate of the students in the August 1989 cohort

group. The predicted results were compared to the actual passing rates and a correlation between the predicted and actual values was calculated. The correlation of R = .44 showed a dramatic improvement in the correlation between predicted and actual student cohorts who passed the examination. However, since the formula incorrectly predicted success and failure on first attempt scores on the NCLEX-RN 56% of the time, one must assume there are other non-academic variables that contribute to passing the examination on first attempt.

2. Multiple Regression Equation for Program Completion

The same steps that were taken to develop the multiple regression equation for pass/fail of the licensing examination were used to determine an equation for program completion. Variables were entered into the pool of predictor variables using the criteria stated above. The correlation matrix for all variables in the pool of variables to be selected may be found in **Appendix IX**. Other variables, which could have been added to the pool, had high correlation with one of the included variables or offered very few observations such an ENC 1151 and ENC 1152. This effort produced the following equation which offered the highest R-square (.27) for determining program completion:

Y = -.26 (HIGH SCHOOL OR COLLEGE ORIGIN)
-.15 (APB 1812 (Final Grade))
-.15 (APB 1811L (Final Grade)) + 5.03

In this equation, Y is the predicted outcome, the number of semesters to complete the program. The predictor variables, final grade in APB 1811L, final grade in APB 1812 and whether or not a student is entering with a high school or college GPA, are those most likely to accurately predict Nursing Program completion time (Note that this is not the GPA itself). The final attempt grades used in the analysis were: A = 4, B = 3, C = 2, D = 1 and F = 0. For high school or college origin, a dummy variable was constructed so that 1 signified a student entering the program with a high school GPA; 0 was used for college GPA. In the equation if Y = 4 (or less than 4.45), it meant the student was expected to complete the program in 4 semesters; if Y = 5 (or greater than or equal to 4.45), the student was expected to complete the program in 5 or more semesters.

A test of significance was applied to the equation to determine whether these variables could be used to accurately predict program completion times for those student cohort scores/grades used in the analysis. Again, the test showed significance at the .001 level of confidence (F = 8.27). One could be 99.9% sure that these predictor variables may be used to accurately predict program completion for those student cohorts included in the analysis. The equation derived in this analysis was based on 69 of 294 possible student cohorts.

In order to validate the results, the equation was used to predict the completion rates of students in the August 1989 cohort group. The predicted results were compared to the actual completion rates, and a correlation between the predicted and actual values was calculated. The correlation of R = .05 showed there was very little correlation between predicted and actual student time to complete the program. Validation of the equation to establish criteria for admission to the Nursing Program was not possible.

Analysis of Unsuccessful Students

Given that efforts to come up with a formula to be used in some capacity to admit students were largely unsuccessful, an attempt was made to analyze characteristics of those students who dropped out of the program and those who graduated but did not pass the licensing exam on the first attempt. Only data for the first three cohorts were included in this analysis.

For each of the independent variables considered as possible predictors of successfully completing the nursing program (whether or not this occurred in 4 or more semesters), the mean of those who dropped out of the program (non-completers) was compared to that of completers. The mean final grade or score for all variables was lower for those students who dropped out of the program with the exception of APB 1190L, which is no longer a required course in the program.

Confidence levels were constructed around each mean for all variables for completers and non-completers. An a=.05 was selected so that the confidence level limits about the mean (high and low), if distributed normally, would contain approximately 95% of all observations for that variable. If the mean value of the non-completers was lower than the lower confidence limit about the mean for those who completed the program, this would imply

statistically significant differences in means and therefore different populations. This then might be the basis for distinguishing between students who would successfully complete the exam if time in program is not important. For APB 1812 and the Science GPA, the confidence limits around the mean for completers and that of non-completers had no values in common. If one is primarily concerned with students completing the program rather than how long it takes, the following variables identified in Table 12 in the form of a minimum score or a final grade average should be considered in establishing criteria for admitting students.

TABLE 12
95% Confidence Limits About the Mean Final Grade or GPA

	Completers				Non-Completers			
Variable	N	High	Low	Mean	N	High	Low	Mean
MGF 1113	50	2.78	2.26	2.52	15	2.40	1.20	1.80
APB 1812	234	2.88	2.67	2.77	39	2.58	1.93	2.26
APB 1812L	234	2.91	2.71	2.81	39	2.79	2.13	2.46
SCI. GPA	235	2.78	2.62	2.70	45	2.60	2.19	2.39

The same comparison was made between the mean grades/scores for students who passed the licensing exam on the first attempt and those who failed or never took the test. The following variables had the largest statistically different means:

TABLE 13
95% Confidence Limits About the Mean Scores, Final Grade or GPA

	Passed Exam- 1st Attempt				Failed/Exam Not Taken			
Variable	N	High	Low	Mean	N	High	Low	Mean
MAPS Math	88	30.4	28.0	29.2	57	28.4	25.1	26.7
MAPS Eng.	80	34.6	30.3	32.4	52	31.3	25.3	28.3
MAPS Read.	98	38.2	36.1	37.1	65	35.3	31.6	33.5
REA 9000	26	3.43	2.88	3.15	24	2.95	2.30	2.62
MGF 1113	32	2.99	2.26	2.62	33	2.43	1.75	2.09
APB 1811	177	2.86	2.62	2.74	103	2.65	2.34	2.50
APB 1812L	177	2.97	2.74	2.86	96	2.75	2.39	2.57
MCB 2010	177	2.82	2.61	2.71	76	2.60	2.30	2.45
MCB 2010	177	3.21	3.00	3.10	75	2.84	2.52	2.68
SCI. GPA	177	2.84	2.65	2.74	103	2.61	2.37	2.49

The confidence limits around the mean for the MAPS reading test, MCB 2010, MCB 2010L and the science GPA of students passing the nursing exam on first attempt compared to those who failed on first attempt or have not taken the exam had no values in common. APB 1812L should probably also be considered as a key course. The number of observations (N) declined by seven (7) between APB 1811 and APB 1812L, and an additional twenty (20) students never completed MCB 2010.

PHASE ONE-A CONCLUSIONS AND RECOMMENDATIONS

1. While there was some improvement in developing an equation to predict those students who would pass the NCLEX-RN on first attempt, there was little or no improvement in predicting completion rates when final grades were used in the analysis in place of first attempt grades. The best equations for passing the exam on first attempt and completion time were based on at least three times as many observations (students) as the previous analysis but only represented 23.5 percent of the 294 students. Limitations with the data (missing MAPS scores, changing course requirements, including only general education courses, etc.) also contributed to this outcome. Forty-four (44%) percent of the students in the August 1989 cohort were accurately predicted based on the equation developed through multiple regression. However, since there was a 56% failure to predict passing rate, there must be other non-general education academic/non-admission reasons students pass or fail the licensing exam on first-attempt.

2. The analysis of students who would be considered "unsuccessful" by this study (i.e. those who dropped out of the program or took 5 semesters or more to complete the program or failed the licensing exam on the first attempt) revealed a possible alternative to a strict "equation" approach.

   If the approach is changed to view "successful" students as those who complete the program without regard to length of time to complete program and who pass the licensing exam on first attempt, the following tests and/or courses could be used in conjunction with other methods to screen or to identify early those students who would be less likely to complete the program. The difference between this method and a regression equation is that a regression program assigns weights for each variable while this approach does not. These scores/courses are recommended for use in determining admission to the Nursing Program, only if they are required prior to acceptance into the program.

   <u>For Completing the Program</u>:

   -Final Grade in APB 1812 greater than or equal to B.
   -GPA in General Education Science Courses greater than 2.60

For Passing the NCLEX-RN on First Attempt:

-MAPS Reading score greater than 38.

-Final Grade in MCB 2010L greater than or equal to B **(and/or)**

-GPA in General Education Science Courses greater than 2.60

3. Phase Two of the nursing study would probably add much more information about those students who are likely to pass the licensing exam on first attempt. In addition to identifying students who would pass the exam, this study would provide more detail about critical courses where students have difficulty or drop out of the program. Final attempt grades rather than first-attempt would be the only major revision recommended to the original proposal as it relates to the licensing exam.

   Several studies of nursing programs have identified that how well a student understands what is involved in being a nurse before they enter the program may affect their performance after they are admitted. For the program completion part of Phase Two, we would recommend the distinction be changed to "completed program" and "did not complete program". Also, it is recommended the analysis for this part be limited to performance in Nursing 1023 (or group of particular courses if correquisites are required) with the intention of determining if this particular course (or courses) should be required prior to admission into the nursing program to provide potential students with more insight into the nursing profession.

APPENDIX I

SPJC Nursing Program
Research Proposal
Admission and Progression of Nursing Students
March 1992

Goal

Identification of factors to facilitate student admission into the nursing program, to predict which students will complete the program and to predict success in passing the NCLEX -RN exam.

Current Proposal

Data will be collected for entering generic students (those enrolled in the full two-year program) for the classes of Spring 1987, Fall 1988, Spring 1988, Fall 1989. Data for Fall 1989 will be excluded from all regression analyses but will be used to validate the models selected. Data will include information related to admission, progression, completion of courses in the nursing program and student scores on the state licensing board exam.

Data will be used to:

1. describe the population.
2. determine admission criteria
3. determine which factors are the most significant predictors of successful program completion in the prescribed four semester sequence of nursing courses.
4. determine which factors are the most significant predictors of passing the NCLEX-RN (licensing exam) on first attempt.

Phase One Study

Data for Spring 1987-Spring 1988 will be analyzed to determined which combination of admission data(Items 2,3 &7) and progression data(Items 1-4) produces the best estimate of criteria to be used to admit students. This would select those students that have the best chance of 1)completing the program in the 4 semester designated sequence and 2) passing the NCLEX-RN exam on the first attempt upon completion of the nursing program. Demographic data will be provided as described below as it relates to the admission of students. Detail will also be provided on those students who do not complete the nursing program and/or fail the NCLEX-RN exam. No formal report will be produced at this time.
(Estimated completion time : mid-late May 1992)

Phase Two Study

Progression data(Items 5-8) will be added to Phase One data, and all items will be analyzed to determine those factors which contribute to students completing the program in 4 semesters and successfully passing on first attempt the NCLEX-RN exam. Demographic data will be provided for additional predictors selected and for students not completing the program and/or failing the NCLEX-RN exam. A formal report summarizing Phase One and Phase Two studies will be provided.
(Estimated completion time: 6 weeks)

Phase Three Study

Phase One and Phase Two analyses and reports would be conducted for the three remaining Nursing programs: Transitional LPN(day), Transitional LPN(night) and Paramedic.

Admission Data

1. Student Number
2. GPA upon admission (High School or College)
3. Ethnic Classification.
4. Gender
5. Age
6. MAPS - all

Progression Data

1. Grade for REA 9000
2. GPA Required Science Courses - first attempt.
3. Grade Required Math Course - first attempt.
4. GPA Required English Courses - first attempt.
5. Grade for each Nursing Course and GPA Nursing Courses - first attempt.
6. GPA All Required General Education Courses in the nursing curriculum upon completion.
7. GPA Nursing Courses at graduation.
8. Identification of students who completed the nursing courses in the designated four semester sequence.
9. Identification of students who required 5 or more semesters to complete the required nursing courses.

Completion Data

1. Pass NCLEX-RN (licensing exam) first attempt.
2. Students who completed the nursing courses in the designated four semester sequence and passed the licensing exam first attempt.
3. Students who required 5 or more semesters to complete the required nursing courses and passed the licensing exam first attempt.

Demographic Data

1. Number of students admitted per class in each ethnic, gender and age category.
2. Admission GPA range per class for each ethnic, gender and age category.
3. Admission testing range for each test by class for each ethnic, gender and age category.
4. GPA range per class for each of the areas listed under progression data for each ethnic, gender and age category.
5. Number of students per class in each ethnic, gender and age category who completed the nursing courses in the prescribed four semester sequence.
6. Number of students per class in each ethnic, gender and age category who required 5 or more semesters to complete the nursing courses for each class admitted.
7. Number of students per class per nursing course progression sequence (4 semester or 5 or more semesters) in each ethnic, gender and age category who pass the licensing exam on first attempt.

Multiple Regression Analysis

PHASE ONE

1. Predictor Variables - Admission GPA , Admission Test Scores and first-attempt Grades in Science, Math and English Courses per Progression Data.
   Criterion Variable - Completion of Program in Four Semester Nursing Course Sequence.
2. Predictor Variables - Admission GPA , Admission Test Scores and first-attempt Grades in Science, Math and English Courses per Progression Data.
   Criterion Variable - Pass NCLEX-RN First Attempt.

PHASE TWO

1. Predictor Variables - All #1predictor variables plus all grades for each Nursing course per Progression Data.
   Criterion Variable - Complete program in 4 semesters.
2. Predictor Variables - All #1predictor variables plus all grades for each Nursing course per Progression Data.(Includes completion or not in 4 semesters)
   Criterion Variable - Pass NCLEX-RN First Attempt.

Statistical Hypotheses

PHASE ONE

1. Admission GPA , Admission Test Scores and first-attempt Grades in Science, Math and English Courses will not significantly predict completion of the nursing program in the prescribed four semester sequence.
2. Admission GPA , Admission Test Scores and first-attempt Grades in Science, Math and English Courses will not significantly predict passing the NCLEX-RN on first attempt.

PHASE TWO

1. Admission GPA , Admission Test Scores, and progression data items 1-7 will not significantly predict completion of the nursing program in the prescribed four semester sequence.
2. Admission GPA , Admission Test Scores, and progression data items 1-9 will not significantly predict passing the NCLEX-RN on first attempt.

Future Considerations (Beyond Phase Three)

1. Complete the above analysis for the past 5 years.
2. Complete an ANOVA to test the significance of the difference between the means of the groups being admitted to the nursing program. The independent variable will be the group (generic, LPN and Paramedic); the dependent variable will be passing the NCLEX-RN on first attempt. The statistical hypothesis is: there is no difference in the first attempt pass rate on the NCLEX-RN in the groups being studied.
3. Other statistical procedures such as chi squares may be pertinent to further studies with the ultimate goal being to facilitate student admission, retention and progression in the nursing program.

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APPENDIX II

COHORTS PASSING NCLEX-RN ON FIRST ATTEMPT BY ETHNIC GROUP

START DATE	ETHNIC GROUP	COMPLETED PROGRAM IN 4 SEMESTERS		COMPLETED PROGRAM IN 5 0R MORE SEMESTERS		TOTAL COMPLETED
JAN'88	I		00%		00%	
	B		00%		00%	
	A	1	100%		00%	1
	H	2	67%	1	33%	3
	W	46	82%	10	18%	56
	F/OTHER		00%		00%	
	TOT	49	82%	11	18%	60
AUG'88	I		00%		00%	
	B	2	67%	1	33%	3
	A		00%	1	100%	1
	H	1	100%		00%	1
	W	34	81%	8	19%	42
	F/OTHER		00%		00%	
	TOT	37	79%	10	21%	47
JAN'89	I		00%		00%	
	B	2	100%		00%	2
	A	2	100%		00%	2
	H		00%		00%	
	W	55	85%	10	15%	65
	F/OTHER	1	100%		00%	1
	TOT	60	86%	10	14%	70
AUG'89	I	1	100%		00%	1
	B	1	33%	2	67%	3
	A	1	100%		00%	1
	H	2	100%		00%	2
	W	63	78%	18	22%	81
	F/OTHER		00%		00%	
	TOT	68	77%	20	23%	88

COHORTS PASSING NCLEX ON FIRST ATTEMPT BY AGE GROUP

START DATE	AGE GROUP	COMPLETED PROGRAM IN 4 SEMESTERS		COMPLETED PROGRAM IN 5 0R MORE SEMESTERS		TOTAL COMPLETED
JAN'88	19&UNDER	5	63%	3	38%	8
	20-24	15	88%	2	12%	17
	25-29	13	100%		00%	13
	30-39	9	69%	4	31%	13
	40-49	6	75%	2	25%	8
	50-59	1	100%		00%	1
	TOT	49	82%	11	18%	60
AUG'88	19&UNDER	2	67%	1	33%	3
	20-24	6	60%	4	40%	10
	25-29	14	82%	3	18%	17
	30-39	8	80%	2	20%	10
	40-49	5	100%		00%	5
	50-59	2	100%		00%	2
	TOT	37	79%	10	21%	47
JAN'89	19&UNDER	4	80%	1	20%	5
	20-24	14	82%	3	18%	17
	25-29	15	88%	2	12%	17
	30-39	21	88%	3	13%	24
	40-49	6	86%	1	14%	7
	50-59		00%		00%	0
	TOT	60	86%	10	14%	70
AUG'89	19&UNDER	3	50%	3	50%	6
	20-24	16	84%	3	16%	19
	25-29	14	70%	6	30%	20
	30-39	27	82%	6	18%	33
	40-49	7	78%	2	22%	9
	50-59	1	100%		00%	1
	TOT	68	77%	20	23%	88

COHORTS PASSING NCLEX ON FIRST ATTEMPT BY GENDER GROUP

START DATE	GENDER GROUP	COMPLETED PROGRAM IN 4 SEMESTERS		COMPLETED PROGRAM IN 5 OR MORE SEMESTERS		TOTAL COMPLETED
JAN'88	MALE	10	71%	4	29%	14
	FEMALE	39	85%	7	15%	46
	TOT	49	82%	11	18%	60
AUG'88	MALE	5	100%		00%	5
	FEMALE	32	76%	10	24%	42
	TOT	37	79%	10	21%	47
JAN'89	MALE	11	79%	3	21%	14
	FEMALE	49	88%	7	13%	56
	TOT	60	86%	10	14%	70
AUG'89	MALE	12	71%	5	29%	17
	FEMALE	56	79%	15	21%	71
	TOT	68	77%	20	23%	88

APPENDIX III

ALL COHORTS-RANGE OF MAPS SCORES BY ETHNIC GROUP

START DATE	ETHNIC GROUP	MATH [MIN	MAX]	ALG. [MIN	MAX]	C.ALG. [MIN	MAX]	ENG. [MIN	MAX]	REA [MIN	MAX]	ESS [MIN	MAX]	TOTAL STUD.
JAN'88	I *									42	42			1
	B	24	30	7	8	3	3	6	17	16	16	2	2	4
	A	25	29	14	23	12	20	9	33	16	23	2	5	3
	H	29	34	14	21	9	9	35	46	23	43	5	6	3
	W	15	35	0	33	0	26	16	50	23	44	2	8	83
	F/OTHER													0
	TOT/RANGE	15	35	0	33	0	26	6	50	16	44	2	8	94
AUG'88	I													0
	B	17	30	0	26	9	9	15	28	23	31	3	4	10
	A	28	28	25	25	13	13	9	9	18	18	4	4	1
	H *													1
	W	15	35	0	35	0	29	0	46	24	44	2	8	82
	F/OTHER													0
	TOT/RANGE	15	35	0	35	0	29	0	46	18	44	2	8	94
JAN'89	I													0
	B	30	33	9	12	4	4	16	29	33	39	4	5	4
	A *													2
	H *	29	29	0	0			31	31	19	33	4	4	2
	W	2	35	0	34	0	20	18	48	19	44	2	8	96
	F/OTHER	31	35	24	28	11	17	4	29	15	35	2	4	2
	TOT/RANGE	2	35	0	34	0	20	4	48	15	44	2	8	106
AUG'89	I *									32	32			2
	B	26	31	0	7	2	2	14	23	18	37	2	4	7
	A *													1
	H	25	33	9	19	7	7	29	35	37	38	4	6	2
	W	8	35	0	29	0	24	12	46	21	43	2	7	118
	F/OTHER													0
	TOT/RANGE	8	35	0	29	0	24	12	46	18	43	2	7	130

*Denotes no MAPS scores reported for this group except where identified.

ALL COHORTS-RANGE OF MAPS SCORES BY AGE GROUP

START DATE	AGE GROUP	MATH [MIN	MAX]	ALG. [MIN	MAX]	C.ALG. [MIN	MAX]	ENG. [MIN	MAX]	REA [MIN	MAX]	ESS [MIN	MAX]	TOTAL STUD.
JAN'88	19&UNDER	24	33	6	29	0	20	6	45	16	40	2	8	12
	20-24	15	35	0	27	0	12	16	48	23	41	2	6	26
	25-29	18	35	0	29	0	15	17	46	17	43	2	6	21
	30-39	17	34	0	33	0	26	9	39	16	44	2	5	22
	40-49	23	33	6	17	0	9	25	50	32	41	4	7	12
	50-59	29	35	18	18	5	5	49	49	43	43	6	6	1
	TOT	15	35	0	33	0	26	6	50	16	44	2	8	94
AUG'88	19&UNDER	24	35	0	35	0	29	9	46	18	42	4	6	7
	20-24	24	34	3	30	0	14	23	29	23	39	3	4	17
	25-29	17	34	0	22	0	8	0	31	24	44	2	6	31
	30-39	15	32	0	23	0	6	15	41	23	43	3	6	22
	40-49	21	34	0	34	0	16	24	43	34	41	4	8	15
	50-59	16	32	0	6	0	1	28	40	36	38	5	5	2
	TOT	15	35	0	35	0	29	0	46	18	44	2	8	94
JAN'89	19&UNDER	22	33	0	32	0	17	16	46	30	39	4	7	8
	20-24	2	35	0	34	0	20	19	46	22	43	2	7	23
	25-29	13	33	0	24	0	11	4	40	15	44	2	7	28
	30-39	21	35	0	29	0	17	24	48	31	43	4	8	32
	40-49	13	31	0	16	0	6	16	44	19	40	2	6	14
	50-59	14	14	0	0	0	0	27	27	25	25	5	5	1
	TOT	2	35	0	34	0	20	4	48	15	44	2	8	106
AUG'89	19&UNDER	20	35	4	29	0	19	18	34	25	38	2	6	8
	20-24	25	35	0	28	0	17	15	44	21	40	2	6	26
	25-29	8	33	0	28	0	24	12	39	18	43	2	7	30
	30-39	10	35	0	23	0	8	19	45	28	43	4	6	45
	40-49	25	34	0	19	0	11	14	44	29	43	2	7	18
	50-59	31	31	9	9	0	0	46	46	42	42	5	6	3
	TOT	8	35	0	29	0	24	12	46	18	43	2	7	130

ALL COHORTS- RANGE OF MAPS SCORES BY GENDER

START DATE	GENDER	MATH [MIN	MAX]	ALG. [MIN	MAX]	C.ALG. [MIN	MAX]	ENG. [MIN	MAX]	REA [MIN	MAX]	ESS [MIN	MAX]	TOTAL STUD.
JAN'88	MALE	27	34	6	33	0	26	16	39	23	44	3	6	21
	FEMALE	15	35	0	29	0	20	6	50	16	43	2	8	73
	TOT	15	35	0	33	0	26	6	50	16	44	2	8	94
AUG'88	MALE	25	29	0	8	0	0	24	40	31	41	4	7	15
	FEMALE	15	35	0	35	0	29	0	46	18	44	2	8	79
	TOT	15	35	0	35	0	29	0	46	18	44	2	8	94
JAN'89	MALE	17	33	0	29	0	16	16	43	31	44	4	5	24
	FEMALE	2	35	0	34	0	20	4	48	15	43	2	8	82
	TOT	2	35	0	34	0	20	4	48	15	44	2	8	106
AUG'89	MALE	20	34	0	29	0	24	13	40	28	43	2	7	24
	FEMALE	8	35	0	29	0	17	12	46	18	43	2	7	106
	TOT	8	35	0	29	0	24	12	46	18	43	2	7	130

APPENDIX IV

ALL COHORTS BY ETHNIC GROUP

START DATE	ETHNIC GROUP	ADMISSION GPA RANGES						TOTAL STUD.	ADMISSION GPA [MIN	MAX]
		UNDER 2.0	2.00-2.50	2.51-3.00	3.01-3.50	OVER 3.50	MISSING GPA			
JAN'88	I			1				1	2.53	2.53
	B	2	1	1				4	1.90	2.51
	A			1	2			3	2.55	3.26
	H		1	1			1	3	2.50	3.00
	W	5	28	30	13	3	4	83	1.75	4.00
	F/OTHER							0		
	TOT	7	30	34	15	3	5	94	1.75	4.00
AUG'88	I							0		
	B	1	4	4	1			10	1.90	3.06
	A		1					1	2.00	2.00
	H		1					1	2.21	2.21
	W	3	25	23	17	9	5	82	1.72	4.00
	F/OTHER							0		
	TOT	4	31	27	18	9	5	94	1.72	4.00
JAN'89	I							0		
	B		3			1		4	2.25	3.95
	A		1	1				2	2.40	2.94
	H		1	1				2	2.40	2.64
	W		24	36	20	12	4	96	2.00	4.00
	F/OTHER		1	1				2	2.00	2.66
	TOT	0	30	39	20	13	4	106	2.00	4.00
AUG'89	I		1	1				2	2.48	3.00
	B		4	1	2			7	2.00	3.47
	A					1		1	3.60	3.60
	H		1	1				2	2.23	2.56
	W		25	50	29	11	3	118	2.00	4.00
	F/OTHER							0		
	TOT	0	31	53	31	12	3	130	2.00	4.00

ALL COHORTS BY AGE GROUP

START DATE	AGE GROUP	ADMISSION GPA RANGES						TOTAL STUD.	ADMISSION GPA [MIN	MAX]
		UNDER 2.0	2.00-2.50	2.51-3.00	3.01-3.50	OVER 3.50	MISSING GPA			
JAN'88	19&UNDER	1	3	3	4	1		12	1.95	4.00
	20-24	2	9	12	2		1	26	1.92	3.16
	25-29	1	6	9	4		1	21	1.75	3.35
	30-39	2	7	6	4	2	1	22	1.80	3.65
	40-49	1	4	4	1		2	12	1.90	3.06
	50-59		1					1	2.50	2.50
	TOT	7	30	34	15	3	5	94	1.75	4.00
AUG'88	19&UNDER		3		3	1		7	2.00	3.54
	20-24	1	8	5	3			17	1.90	3.47
	25-29	2	11	10	2	2	4	31	1.72	4.00
	30-39	1	6	7	4	3	1	22	1.86	3.66
	40-49		3	4	6	2		15	2.00	4.00
	50-59			1		1		2	2.93	3.68
	TOT	4	31	27	18	9	5	94	1.72	4.00
JAN'89	19&UNDER		3	4	1			8	2.25	3.20
	20-24		8	10	2	3		23	2.16	4.00
	25-29		10	11	6	1		28	2.00	3.57
	30-39		6	9	7	8	2	32	2.20	4.00
	40-49		3	4	4	1	2	14	2.20	3.89
	50-59			1				1	2.85	2.85
	TOT	0	30	39	20	13	4	106	2.00	4.00
AUG'89	19&UNDER		1	5	1	1		8	2.20	3.53
	20-24		10	8	4	3	1	26	2.00	3.58
	25-29		9	15	5		1	30	2.00	3.42
	30-39		7	17	17	3	1	45	2.21	3.83
	40-49		4	7	4	3		18	2.00	3.76
	50-59			1		2		3	2.86	4.00
	TOT	0	31	53	31	12	3	130	2.00	4.00

ALL COHORTS BY GENDER GROUP

START DATE	GENDER GROUP	ADMISSION GPA RANGES						TOTAL STUD.	ADMISSION GPA [MIN	MAX]
		UNDER 2.0	2.00-2.50	2.51-3.00	3.01-3.50	OVER 3.50	MISSING GPA			
JAN'88	MALE	1	9	6	2	1	2	21	1.92	3.57
	FEMALE	6	21	28	13	2	3	73	1.75	4.00
	TOT	7	30	34	15	3	5	94	1.75	4.00
AUG'88	MALE		4	5	2	2	2	15	2.18	4.00
	FEMALE	4	27	22	16	7	3	79	1.72	4.00
	TOT	4	31	27	18	9	5	94	1.72	4.00
JAN'89	MALE		9	5	4	5	1	24	2.00	4.00
	FEMALE		21	34	16	8	3	82	2.00	4.00
	TOT	0	30	39	20	13	4	106	2.00	4.00
AUG'89	MALE		5	13	3	2	1	24	2.00	3.83
	FEMALE		26	40	28	10	2	106	2.00	4.00
	TOT	0	31	53	31	12	3	130	2.00	4.00

APPENDIX V

Courses taken by students in the Nursing Program.

REA 9000	Basic Reading Skills
ENC 1151	Communications I
ENC 1152	Communications II
ENC 1101	Composition I
ENC 1102	Composition II
APB 1811	Human Anatomy & Physiology I
APB 1811L	Human Anatomy & Physiology Laboratory I
APB 1812	Human Anatomy & Physiology II
APB 1812L	Human Anatomy & Physiology Laboratory II
MCB 2010	Microbiology
MCB 2010l	Microbiology Laboratory
MGF 1113	General Education Mathematics I
MGF 1119	Introductory Mathematics with Applications
APB 1190	Human Anatomy and Physiology
APB 1190L	Human Anatomy and Physiology Laboratory

APPENDIX VI

ALL COHORTS-1ST ATTEMPT GRADES
A - ETHNICITY

START DATE	ETHNIC GROUP	MGF1119 A	B	C	D	F	W	OTH	MGF1113 A	B	C	D	F	W	OTH	MATH GPA <2.0	2.0-2.5	2.51-3.0	3.01-3.5	>3.5	OTH	TOTAL STUD.
JAN'88	I	1													1					1		1
	B			2	1			1						1	3	1	2				1	4
	A	2	1												3			1		2		3
	H	1	1				1								3			1		1	1	3
	W	19	23	7	1	1	9	23	4	3	1	1		3	71	2	7	24		20	30	83
	F/OTHER																					0
	TOT	23	25	9	2	1	10	24	4	3	1	1	0	4	81	3	9	26	0	24	32	94
AUG'88	I																					0
	B	1	2	2			1	4		1	1				8		3	3		1	3	10
	A	1													1					1		1
	H							1				1									1	1
	W	23	19	11			1	28	1	2	2	2		3	72		11	20		24	27	82
	F/OTHER																					0
	TOT	25	21	13	0	0	2	33	1	3	3	3	0	3	81	0	14	23	0	26	31	94
JAN'89	I																					0
	B	1	2		1										4	1		2		1		4
	A		1					1							2			1			1	2
	H	1					1								2					1	1	2
	W	21	16	7	1		5	46	7	3	2	2	2	2	78	2	7	16		24	47	96
	F/OTHER	2													2						2	2
	TOT	25	19	7	2	0	6	47	7	3	2	2	2	2	88	3	7	19	0	26	51	106
AUG'89	I	1						1						1	1					1	1	2
	B	1	1		1			4	1	2	1	1			2	1		3		2	1	7
	A							1	1												1	1
	H		1					1							2			1			1	2
	W	12	21	7	1		3	74	14	14	11	1		7	71	2	18	33		24	41	118
	F/OTHER																					0
	TOT	14	23	7	2	0	3	81	16	16	12	2	0	8	76	3	18	37	0	27	45	130

ALL COHORTS- 1ST ATTEMPT GRADES
A - ETHNICITY

START DATE	ETHNIC GROUP	REA9000 A	B	C	D	F	W	OTH	ENC1101 A	B	C	D	F	W	OTH	ENC1102 A	B	C	D	F	W	OTH	TOTAL STUD.
JAN'88	I							1		1												1	1
	B			3				1		2	1			1				2			1	1	4
	A	1	1	1					1		1				1	1	1					1	3
	H							3						2	1		1				1	1	3
	W	4	5	1			2	71	9	31	14	7		6	16	11	27	15	1		7	22	83
	F/OTHER																						0
	TOT	5	6	5	0	0	2	76	10	34	16	7	0	9	18	12	29	17	1	0	9	26	94
AUG'88	I																						0
	B			3				7		2	4				4	1	3	2			1	3	10
	A		1							1							1						1
	H							1			1							1					1
	W	3	7	1			1	70	17	25	17	3		1	19	16	25	12	2	1	9	17	82
	F/OTHER																						0
	TOT	3	8	4	0	0	1	78	17	28	22	3	0	1	23	17	29	15	2	1	10	20	94
JAN'89	I																						0
	B		2					2	1	1	1			1		2		1				1	4
	A			1				1		1	1					1	1						2
	H		1					1		1					1		1					1	2
	W	1	8	1	1			85	15	26	27	3		4	21	18	27	22	1	1	7	20	96
	F/OTHER	1						1		1					1						1	1	2
	TOT	2	11	2	1	0	0	90	16	30	29	3	0	5	23	21	29	23	1	1	8	23	106
AUG'89	I							2			1			1			1		1				2
	B			2	1		1	3	1	1	1			1	3		1	2	1			3	7
	A							1						1			1						1
	H							2			1				1		1					1	2
	W	4	5	3			1	105	16	40	20	2		12	28	18	35	23			11	31	118
	F/OTHER																						0
	TOT	4	5	5	1	0	2	113	17	41	23	2	0	15	32	18	39	25	2	0	11	35	130

ALL COHORTS- 1ST ATTEMPT GRADES
A - ETHNICITY

START	ETHNIC	ENC1151							ENC1152							ENGLISH GPA						TOTAL
DATE	GROUP	A	B	C	D	F	W	OTH	A	B	C	D	F	W	OTH	<2.0	2.0-2.5	2.51-3.0	3.01-3.5	>3.5	OTH	STUD.
JAN'88	I		1						1										1			1
	B							4			1				3		3				1	4
	A		1					2		1					2		1	1		1		3
	H							3							3						3	3
	W	4	8	2			1	68	5	9				1	68	4	19	31	14	7	8	83
	F/OTHER																					0
	TOT	4	10	2	0	0	1	77	6	10	1	0	0	1	76	4	23	32	15	8	12	94
AUG'88	I																					0
	B		1	2				7		1	1			1	7		6	3	1			10
	A							1							1			1				1
	H							1							1		1					1
	W	7	7	2			1	65	7	6	3				66	9	24	24	10	15		82
	F/OTHER																					0
	TOT	7	8	4	0	0	1	74	7	7	4	0	0	1	75	9	31	28	11	15	0	94
JAN'89	I																					0
	B							4				1			3	1	1		1	1		4
	A							2							2		1		1			2
	H			1				1		1					1		1	1				2
	W	5	6	3				82	4	9		1			82	4	34	24	11	15	8	96
	F/OTHER	1						1	1						1			1		1		2
	TOT	6	6	4	0	0	0	90	5	10	0	2	0	0	89	5	37	26	13	17	8	106
AUG'89	I							2							2	1		1				2
	B		1	1			2	3		1	1	1			4	1	3	2			1	7
	A							1							1			1				1
	H							2		1					1		1	1				2
	W	4	11	4		1	4	94	6	8	4	1		3	96	2	35	37	20	10	14	118
	F/OTHER																					0
	TOT	4	12	5	0	1	6	102	6	10	5	2	0	3	104	4	39	42	20	10	15	130

ALL COHORTS- 1ST ATTEMPT GRADES
A - ETHNICITY

START DATE	ETHNIC GROUP	APB1190 A	B	C	D	F	W	OTH	APB1190L A	B	C	D	F	W	OTH	APB1811 A	B	C	D	F	W	OTH	TOTAL STUD.
JAN'88	I			1							1						1						1
	B						1	3							4			2			1	1	4
	A							3							3	1	2						3
	H			1				2			1				2		2					1	3
	W	1	5	4			1	72	2	4	3			2	72	13	24	24			2	20	83
	F/OTHER																						0
	TOT	1	5	6	0	0	2	80	2	4	5	0	0	2	81	14	29	26	0	0	3	22	94
AUG'88	I																						0
	B						1	9						1	9	1	2	3				4	10
	A							1							1			1					1
	H							1							1			1					1
	W		3	2			1	76		4	1			2	75	18	23	21		1	7	12	82
	F/OTHER																						0
	TOT	0	3	2	0	0	2	87	0	4	1	0	0	3	86	19	25	26	0	1	7	16	94
JAN'89	I																						0
	B							4							4	1						3	4
	A							2							2			1				1	2
	H							2							2			2					2
	W		3	6	2		1	84	2	4	1	1			88	22	26	28	3	1	2	14	96
	F/OTHER							2							2	1		1					2
	TOT	0	3	6	2	0	1	94	2	4	1	1	0	0	98	24	26	32	3	1	2	18	106
AUG'89	I							2							2		1					1	2
	B			1				6			1				6		1	3		1	2		7
	A							1							1			1					1
	H			1				1	1						1			1				1	2
	W	1	3	6			2	106	2	4	5			1	106	22	33	40			4	19	118
	F/OTHER																						0
	TOT	1	3	8	0	0	2	116	3	4	6	0	0	1	116	22	35	45	0	1	6	21	130

ALL COHORTS- 1ST ATTEMPT GRADES
A - ETHNICITY

START DATE	ETHNIC GROUP	APB1811LL							APB1812							APB1812L							TOTAL STUD.
		A	B	C	D	E	W	OTH	A	B	C	D	E	W	OTH	A	B	C	D	E	W	OTH	
JAN'88	I		1						1							1							1
	B			2				2	1		1			1	1	1		1			1	1	4
	A		2	1						1	1			1		1	1				1		3
	H			2				1	1	1					1		1	1				1	3
	W	14	22	22			3	22	12	22	21			10	18	20	14	19			9	21	83
	F/OTHER																						0
	TOT	14	25	27	0	0	3	25	15	24	23	0	0	12	20	23	16	21	0	0	11	23	94
AUG'88	I																						0
	B	1	2	3				4	1	1	3			2	3	1	1	2			3	3	10
	A		1							1							1						1
	H		1								1							1					1
	W	17	25	21		1	7	11	13	23	27			6	13	14	22	23			6	17	82
	F/OTHER																						0
	TOT	18	29	24	0	1	7	15	14	25	31	0	0	8	16	15	24	26	0	0	9	20	94
JAN'89	I																						0
	B		1	1				2			1			2	1			2			2		4
	A		1					1			1				1			1				1	2
	H			2											2		1					1	2
	W	27	26	23		1	3	16	18	22	20		1	8	27	17	21	23	1		6	28	96
	F/OTHER	1	1						1					1			1				1		2
	TOT	28	29	26	0	1	3	19	19	22	22	0	1	11	31	17	23	26	1	0	9	30	106
AUG'89	I		1					1															2
	B		1	4			2		1					1			1				1		7
	A	1								1	2				4			3			2	2	1
	H			1				1		1						1							2
	W	27	44	19			8	20							2							2	118
	F/OTHER								25	33	36			6	18	17	33	32		1	8	27	0
	TOT	28	46	24	0	0	10	22	26	35	38	0	0	7	24	18	34	35	0	1	11	31	130

ALL COHORTS- 1ST ATTEMPT GRADES
A - ETHNICITY

START	ETHNIC	MCB2010							MCB2010L							SCIENCE GPA						TOTAL
DATE	GROUP	A	B	C	D	E	W	OTH	A	B	C	D	E	W	OTH	<2.0	2.0-2.5	2.51-3.0	3.01-3.5	>350	OTH	STUD.
JAN'88	I						1							1				1				1
	B						1	3			1			1	2		2	1			1	4
	A		2	1						2	1						1	1	1			3
	H			2			1				2			1			1	2				3
	W	10	21	31	1		5	15	15	35	15	1		5	12		33	24	7	11	8	83
	F/OTHER																					0
	TOT	10	23	34	1	0	8	18	15	37	19	1	0	8	14	0	37	29	8	11	9	94
AUG'88	I																					0
	B	1	2	1			1	5	2	3	2				3	2	4	3		1		10
	A			1							1						1					1
	H			1							1						1					1
	W	8	26	27	1		5	15	15	34	11	1		6	15	5	30	24	10	13		82
	F/OTHER																					0
	TOT	9	28	30	1	0	6	20	17	37	15	1	0	6	18	7	36	27	10	14	0	94
JAN'89	I																					0
	B		1	2				1		1	2				1		2		1		1	4
	A			2					1		1						2					2
	H		1					1		1					1		1	1				2
	W	11	34	26			6	17	23	35	14			8	16	5	32	25	15	15	4	96
	F/OTHER			1				1		1					1		1			1		2
	TOT	11	36	31	0	0	8	20	24	38	17	0	0	8	19	5	38	26	16	16	5	106
AUG'89	I		1					1		1					1				1		1	2
	B			4			1	2		1	3			1	2	1	5				1	7
	A		1						1									1				1
	H			2						1	1						2					2
	W	33	34	28			8	15	39	44	12			7	16		41	31	17	25	4	118
	F/OTHER																					0
	TOT	33	36	34	0	0	9	18	40	47	16	0	0	8	19	1	48	32	18	25	6	130

ALL COHORTS-1ST ATTEMPT GRADES

B - AGE

START	AGE	MGF1119							MGF1113							MATH GPA						TOTAL
DATE	GROUP	A	B	C	D	F	W	OTH	A	B	C	D	F	W	OTH	<2.0	2.0-2.5	2.51-3.0	3.01-3.5	>3.5	OTH	STUD.
JAN'88	19&UNDER	3	3	2	1		3								12	1	2	3		3	3	12
	20-24	7	6	2		1	3	7		1					25	1	2	6		7	10	26
	25-29	6	6	2				7	1	2				2	16		2	7		6	6	21
	30-39	5	5	1			3	8	3		1	1		1	16		1	5		6	10	22
	40-49	2	4	2	1		1	2						1	11	1	2	4		2	3	12
	50-59		1												1			1				1
	TOT	23	25	9	2	1	10	24	4	3	1	1	0	4	81	3	9	26	0	24	32	94
AUG'88	19&UNDER	2	2	1				2							7		1	2		2	2	7
	20-24	5	7				1	4							17			7		5	5	17
	25-29	3	8	8				12		2	1	1		2	25		8	9		3	11	31
	30-39	6	2	3			1	10			2	2		1	17		4	2		6	10	22
	40-49	7	2	1				5	1	1					13		1	3		8	3	15
	50-59	2													2					2		2
	TOT	25	21	13	0	0	2	33	1	3	3	3	0	3	81	0	14	23	0	26	31	94
JAN'89	19&UNDER	2	2				1	3		1	2				5			2		2	4	8
	20-24	3	7				1	12	1	1				1	20			7		4	12	23
	25-29	4	7	3	1		2	11				1		1	26	1	3	7		4	13	28
	30-39	15	3	2			1	11	3	1		1			27		2	3		15	12	32
	40-49	1		1	1		1	10	3				2		9	2	1			3	8	14
	50-59			1											1		1					1
	TOT	25	19	7	2	0	6	47	7	3	2	2	2	2	88	3	7	19	0	28	49	106
AUG'89	19&UNDER		3	1				4	1		1				6		2	3		1	2	8
	20-24	6	5	3				12	2	1	1	1		2	19	1	4	6		8	7	26
	25-29	1	6	2			3	18	2	5	5			2	16		6	10		3	11	30
	30-39	3	9	1	1			31	8	6	4			2	25	1	5	14		9	16	45
	40-49	3			1			14	1	4	1			3	9	1	1	4		3	9	18
	50-59	1						2	2						1					3		3
	TOT	14	23	7	2	0	3	81	16	16	12	1	0	9	76	3	18	37	0	27	45	130

ALL COHORTS- 1ST ATTEMPT GRADES
B - AGE

START DATE	AGE GROUP	REA9000 A	B	C	D	F	W	OTH	ENC1101 A	B	C	D	F	W	OTH	ENC1102 A	B	C	D	F	W	OTH	TOTAL STUD.
JAN'88	19&UNDER	1		2				9	2	3	2			2	3	2	2	1			1	6	12
	20-24	1	2					23	1	11	6	1		1	6	3	8	5			2	8	26
	25-29	1	2	1			1	16	3	8	3			4	3	1	7	5			2	6	21
	30-39	2	1	1				18	4	7	3	6		1	1	3	8	4	1		3	3	22
	40-49		1	1			1	9		5	2			1	4	3	4	2			1	2	12
	50-59							1							1							1	1
	TOT	5	6	5	0	0	2	76	10	34	16	7	0	9	18	12	29	17	1	0	9	26	94
AUG'88	19&UNDER		1					6	2	3	1				1	2	2	1				2	7
	20-24	1	1	1			1	13	2	7	7				1	4	5	3		1	3	1	17
	25-29	1	5	1				24	3	7	10	1			10	4	8	6	1		5	7	31
	30-39			1				21	5	7	4	1		1	4	3	9	4	1		1	4	22
	40-49		1	1				13	5	3		1			6	4	4	1			1	5	15
	50-59	1						1		1					1		1					1	2
	TOT	3	8	4	0	0	1	78	17	28	22	3	0	1	23	17	29	15	2	1	10	20	94
JAN'89	19&UNDER		1					7		1	3	1			3		3				1	4	8
	20-24	1	3	1				18	3	7	11			2		3	7	7	1		2	3	23
	25-29	1	2	1				24	3	8	4	2		1	10	3	9	5		1	2	8	28
	30-39		3					29	8	7	8			2	7	11	7	6			2	6	32
	40-49		1		1			12	2	6	3				3	4	3	4			1	2	14
	50-59		1							1								1					1
	TOT	2	11	2	1	0	0	90	16	30	29	3	0	5	23	21	29	23	1	1	8	23	106
AUG'89	19&UNDER							8	2	2	2				2	1	5					2	8
	20-24	1	1	2			1	21	2	9	4	1		2	8	2	9	6	1		3	5	26
	25-29	1	1	2			1	25	3	9	4			6	8	4	5	7			3	11	30
	30-39	1	2	1				41	6	16	10	1		6	6	8	13	10			5	9	45
	40-49		1		1			16	3	5	3			1	6	3	7	2	1			5	18
	50-59	1						2	1						2							3	3
	TOT	4	5	5	1	0	2	113	17	41	23	2	0	15	32	18	39	25	2	0	11	35	130

ALL COHORTS-1ST ATTEMPT GRADES
B - AGE

START	AGE	ENC1151							ENC1152							ENGLISH GPA						TOTAL
DATE	GROUP	A	B	C	D	E	W	OTH	A	B	C	D	E	W	OTH	<2.0	2.0-2.5	2.51-3.0	3.01-3.5	>3.5	OTH	STUD.
JAN'88	19&UNDER							12	1		1				10		2	3	1	2	4	12
	20-24	2	3	1			1	19	2	5					19		7	12	4	1	2	26
	25-29	1	4	1				15	2	2					17		5	7	5	1	3	21
	30-39		2					20	1	1				1	19	4	6	7	2	3		22
	40-49	1	1					10		2					10		3	3	3	1	2	12
	50-59							1							1						1	1
	TOT	4	10	2	0	0	1	77	6	10	1	0	0	1	76	4	23	32	15	8	12	94
AUG'88	19&UNDER		1					6	1						6	1	2	2	1	1		7
	20-24	1	1				1	14	2	1					14		8	3	4	2		17
	25-29	3	3	2				23	2	2	3			1	23	4	12	9	2	4		31
	30-39		1	2				19		2	1				19	1	9	7	3	2		22
	40-49	2	2					11	1	2					12	3		6	1	5		15
	50-59	1						1	1						1			1		1		2
	TOT	7	8	4	0	0	1	74	7	7	4	0	0	1	75	9	31	28	11	15	0	94
JAN'89	19&UNDER	1	1	1				5	2	1					5		5	1	1	1		8
	20-24			1				22							23	1	11	5	3	1	2	23
	25-29	3	2					23	2	4		1			21	3	6	8	3	4	4	28
	30-39	1	2	2				27		4		1			27	1	9	7	5	8	2	32
	40-49	1	1					12	1	1					12		5	5	1	3		14
	50-59							1							1		1					1
	TOT	6	6	4	0	0	0	90	5	10	0	2	0	0	89	5	37	26	13	17	8	106
AUG'89	19&UNDER		2					6		2					6		1	5	2			8
	20-24	2		1			2	21	1	1	2			1	21	1	10	9	3	1	2	26
	25-29		3	3		1	2	21	1	1	1	2		1	24	2	10	7	4	1	6	30
	30-39	1	5	1			2	36	2	4	1			1	37	1	13	17	7	5	2	45
	40-49	1	2					15	1	2	1				14		5	4	4	2	3	18
	50-59							3	1						2					1	2	3
	TOT	4	12	5	0	1	6	102	6	10	5	2	0	3	104	4	39	42	20	10	15	130

ALL COHORTS- 1ST ATTEMPT GRADES
B - AGE

START DATE	AGE GROUP	APB1190 A	B	C	D	E	W	OTH	APB1190L A	B	C	D	E	W	OTH	APB1811 A	B	C	D	E	W	OTH	TOTAL STUD.
JAN'88	19&UNDER		1					11			1				11	1	5	2			2	2	12
	20-24		1	1				24		2					24	3	9	9			1	4	26
	25-29	1	1	3				16	2	1	2				16	4	4	7				6	21
	30-39			1			1	20						2	20	4	7	5				6	22
	40-49		2	1			1	8		1	2				9	1	4	3				4	12
	50-59							1							1	1							1
	TOT	1	5	6	0	0	2	80	2	4	5	0	0	2	81	14	29	26	0	0	3	22	94
AUG'88	19&UNDER							7							7		1	4			1	1	7
	20-24						1	16						1	16	4	6	3				4	17
	25-29		2				1	28		2				1	28	4	8	10			3	6	31
	30-39		1	1				20		1	1				20	4	5	7			2	4	22
	40-49			1				14		1				1	13	5	5	2		1	1	1	15
	50-59							2							2	2							2
	TOT	0	3	2	0	0	2	87	0	4	1	0	0	3	86	19	25	26	0	1	7	16	94
JAN'89	19&UNDER							8							8	1	1	3	1			2	8
	20-24			2	2			19		2	1	1			19	3	4	10			2	4	23
	25-29		1	2				25	1	2					25	4	9	10				5	28
	30-39		2	1			1	28	1						31	9	10	6	2			5	32
	40-49			1				13							14	7	1	3		1		2	14
	50-59							1							1		1						1
	TOT	0	3	6	2	0	1	94	2	4	1	1	0	0	98	24	26	32	3	1	2	18	106
AUG'89	19&UNDER							8							8		1	5			1	1	8
	20-24			1				25							26	4	5	13				4	26
	25-29			4				26	1	1	3				25	3	9	5		1	2	10	30
	30-39	1	3	2			2	37	2	3	2			1	37	10	13	16			2	4	45
	40-49							18							18	4	6	5			1	2	18
	50-59			1				2			1				2	1	1	1					3
	TOT	1	3	8	0	0	2	116	3	4	6	0	0	1	116	22	35	45	0	1	6	21	130

ALL COHORTS- 1ST ATTEMPT GRADES
B - AGE

START DATE	AGE GROUP	APB1811LL							APB1812							APB1812L							TOTAL STUD.
		A	B	C	D	E	W	OTH	A	B	C	D	E	W	OTH	A	B	C	D	E	W	OTH	
JAN'88	19&UNDER	2	2	5			1	2	1	4	2			4	1	2	3	1			3	3	12
	20-24	4	11	5			1	5	3	8	8			2	5	7	3	10			3	3	26
	25-29	3	3	7			1	7	5	3	6			2	5	5	4	5			2	5	21
	30-39	2	7	6				7	3	7	5			4	3	6	3	4			3	6	22
	40-49	2	2	4				4	2	2	2				6	2	3	1				6	12
	50-59	1							1							1							1
	TOT	14	25	27	0	0	3	25	15	24	23	0	0	12	20	23	16	21	0	0	11	23	94
AUG'88	19&UNDER	1	3	1			1	1		2	3			1	1		2	2			1	2	7
	20-24	4	4	7				2	4	2	6			3	2	4	3	4			3	3	17
	25-29	2	10	10			2	7	1	13	9			4	4	2	8	12			5	4	31
	30-39	2	7	6			3	4	3	4	7				8	2	7	5				8	22
	40-49	8	4			1	1	1	5	3	6				1	5	4	3				3	15
	50-59	1	1						1	1						2							2
	TOT	18	29	24	0	1	7	15	14	25	31	0	0	8	16	15	24	26	0	0	9	20	94
JAN'89	19&UNDER	1	1	5				1		1	3			2	2		1	4			1	2	8
	20-24	4	7	5			3	4	1	7	7			1	7	1	5	8			1	8	23
	25-29	5	10	8				5	4	4	6		1	4	9	4	6	8			4	6	28
	30-39	13	7	5				7	10	8	4			2	8	9	9	3			2	9	32
	40-49	5	3	3		1		2	4	2	2			2	4	3	2	3	1		1	4	14
	50-59		1												1							1	1
	TOT	28	29	26	0	1	3	19	19	22	22	0	1	11	31	17	23	26	1	0	9	30	106
AUG'89	19&UNDER		3	4			1			1	6				1	1	2	3			1	1	8
	20-24	5	9	5			2	5	4	6	12			2	2	4	6	10			1	5	26
	25-29	5	9	7			2	7	4	7	8			3	8	1	7	9		1	3	9	30
	30-39	12	17	6			4	6	10	13	10			1	11	5	12	10			3	15	45
	40-49	4	8	2			1	3	6	8	2			1	1	5	7	3			2	1	18
	50-59	2						1	2						1	2					1		3
	TOT	28	46	24	0	0	10	22	26	35	38	0	0	7	24	18	34	35	0	1	11	31	130

ALL COHORTS- 1ST ATTEMPT GRADES
B - AGE

START DATE	AGE GROUP	MCB2010 A	B	C	D	E	W	OTH	MCB2010L A	B	C	D	E	W	OTH	SCIENCE GPA <2.0	2.0-2.5	2.51-3.0	3.01-3.5	≥3.50	OTH	TOTAL STUD.
JAN'88	19&UNDER	1	1	6			1	3	1	4	4				3		5	4		1	2	12
	20-24	3	4	14			2	3	5	11	4			3	3		10	9	1	3	3	26
	25-29	1	8	3			3	6	3	7	3			3	5		8	7	3	2	1	21
	30-39	2	7	8	1		1	3	3	10	4	1		1	3		8	5	3	3	3	22
	40-49	2	3	3			1	3	2	5	4			1			6	4	1	1		12
	50-59	1							1											1		1
	TOT	10	23	34	1	0	8	18	15	37	19	1	0	8	14	0	37	29	8	11	9	94
AUG'88	19&UNDER		1	4			1	1		3	2			1	1	1	4	2				7
	20-24	3	5	7				2	7	5	2			1	2	1	5	5	3	3		17
	25-29		8	11			3	9	3	11	6			3	8	2	14	11	3	1		31
	30-39	1	7	6	1		2	5	4	8	4	1		1	4	2	11	5	1	3		22
	40-49	4	7	2				2	3	9	1				2	1	2	4	2	5		15
	50-59	1						1		1					1					2		2
	TOT	9	28	30	1	0	6	20	17	37	15	1	0	6	18	7	36	27	10	14	0	94
JAN'89	19&UNDER		2	2				4		3	2				3	1	4	2			1	8
	20-24	1	4	12			1	5	3	9	5			1	5	2	11	7	1	1	1	23
	25-29	3	9	8			2	6	4	13	3			2	6		11	6	5	3	3	28
	30-39	5	15	5			4	3	12	10	3			4	3	1	7	8	8	8		32
	40-49	2	6	3			1	2	5	3	3			1	2	1	4	3	2	4		14
	50-59			1							1						1					1
	TOT	11	36	31	0	0	8	20	24	38	17	0	0	8	19	5	38	26	16	16	5	106
AUG'89	19&UNDER	3	2	1			1	1	3	2	1			1	1		5	2	1			8
	20-24	5	6	9			2	4	4	14	4			1	3		15	4	2	4	1	26
	25-29	6	10	6			2	6	10	9	3			2	6	1	11	8	3	5	2	30
	30-39	12	10	17			4	2	16	14	7			4	4		15	11	8	10	1	45
	40-49	5	7	1				5	5	7	1				5		1	7	4	4	2	18
	50-59	2	1						2	1							1			2		3
	TOT	33	36	34	0	0	9	18	40	47	16	0	0	8	19	1	48	32	18	25	6	130

ALL COHORTS-1ST ATTEMPT GRADES
C - GENDER

START		MGF1119							MGF1113							MATH GPA						TOTAL
DATE	GENDER	A	B	C	D	F	W	OTH	A	B	C	D	F	W	OTH	<2.0	2.0-2.5	2.51-3.0	3.01-3.5	>3.5	OTH	STUD.
JAN'88	MALE	5	4	1			1	10	4		1	1			15		1	4		6	10	21
	FEMALE	18	21	8	2	1	9	14		3				4	66	3	8	22		18	22	73
	TOT	23	25	9	2	1	10	24	4	3	1	1	0	4	81	3	9	26	0	24	32	94
AUG'88	MALE	1	4					10	1	1				2	11			5		2	8	15
	FEMALE	24	17	13			2	23		2	3	3		1	70		14	18		24	23	79
	TOT	25	21	13	0	0	2	33	1	3	3	3	0	3	81	0	14	23	0	26	31	94
JAN'89	MALE	6	4	1	1		2	10	1			2	2	1	18	2	1	4		6	11	24
	FEMALE	19	15	6	1		4	37	6	3	2			1	70	1	6	15		22	38	82
	TOT	25	19	7	2	0	6	47	7	3	2	2	2	2	88	3	7	19	0	28	49	106
AUG'89	MALE	1	3				1	19	2	2	5			2	13		5	5		3	11	24
	FEMALE	13	20	7	2		2	62	14	14	7	1		7	63	3	13	32		24	34	106
	TOT	14	23	7	2	0	3	81	16	16	12	1	0	9	76	3	18	37	0	27	45	130

ALL COHORTS- 1ST ATTEMPT GRADES
C - GENDER

START DATE	GENDER GROUP	REA9000 A	B	C	D	F	W	OTH	ENC1101 A	B	C	D	F	W	OTH	ENC1102 A	B	C	D	F	W	OTH	TOTAL STUD.
JAN'88	MALE	1	1	1				18	2	5	6	4		1	3	3	5	6	1		2	4	21
	FEMALE	4	5	4			2	58	8	29	10	3		8	15	9	24	11			7	22	73
	TOT	5	6	5	0	0	2	76	10	34	16	7	0	9	18	12	29	17	1	0	9	26	94
AUG'88	MALE		1					14	4	3	3	1			4	3	7	1	1		1	2	15
	FEMALE	3	7	4			1	64	13	25	19	2		1	19	14	22	14	1	1	9	18	79
	TOT	3	8	4	0	0	1	78	17	28	22	3	0	1	23	17	29	15	2	1	10	20	94
JAN'89	MALE		1		1			22	2	6	7	2		3	4	4	5	4	1	1	2	7	24
	FEMALE	2	10	2				68	14	24	22	1		2	19	17	24	19			6	16	82
	TOT	2	11	2	1	0	0	90	16	30	29	3	0	5	23	21	29	23	1	1	8	23	106
AUG'89	MALE	1		1				22	3	9	3			3	6	6	4	7			1	6	24
	FEMALE	3	5	4	1		2	91	14	32	20	2		12	26	12	35	18	2		10	29	106
	TOT	4	5	5	1	0	2	113	17	41	23	2	0	15	32	18	39	25	2	0	11	35	130

ALL COHORTS-1ST ATTEMPT GRADES
C - GENDER

START	GENDER	ENC1151							ENC1152							ENGLISH GPA						TOTAL
DATE	GROUP	A	B	C	D	F	W	OTH	A	B	C	D	F	W	OTH	<2.0	2.0-2.5	2.51-3.0	3.01-3.5	>3.5	OTH	STUD.
JAN'88	MALE	1	1	1				18	1	3					17	3	7	5	3	2	1	21
	FEMALE	3	9	1			1	59	5	7	1			1	59	1	16	27	12	6	11	73
	TOT	4	10	2	0	0	1	77	6	10	1	0	0	1	76	4	23	32	15	8	12	94
AUG'88	MALE		1					14		1					14	4	2	6	1	2		15
	FEMALE	7	7	4			1	60	7	6	4			1	61	5	29	22	10	13		79
	TOT	7	8	4	0	0	1	74	7	7	4	0	0	1	75	9	31	28	11	15	0	94
JAN'89	MALE		1	2				21		3		2			19	5	7	5	3	1	3	24
	FEMALE	6	5	2				69	5	7					70		30	21	10	16	5	82
	TOT	6	6	4	0	0	0	90	5	10	0	2	0	0	89	5	37	26	13	17	8	106
AUG'89	MALE	1		1			2	20	1		1			1	21		9	4	4	3	4	24
	FEMALE	3	12	4		1	4	82	5	10	4	2		2	83	4	30	38	16	7	11	106
	TOT	4	12	5	0	1	6	102	6	10	5	2	0	3	104	4	39	42	20	10	15	130

ALL COHORTS- 1ST ATTEMPT GRADES
C - GENDER

START DATE	GENDER GROUP	APB1190 A	B	C	D	E	W	OTH	APB1190L A	B	C	D	E	W	OTH	APB1811 A	B	C	D	E	W	OTH	TOTAL STUD.
JAN'88	MALE		2					19	1		1				19	4	9	3				5	21
	FEMALE	1	3	6			2	61	1	4	4			2	62	10	20	23			3	17	73
	TOT	1	5	6	0	0	2	80	2	4	5	0	0	2	81	14	29	26	0	0	3	22	94
AUG'88	MALE		1					14		1					14	4	4	2			2	3	15
	FEMALE		2	2			2	73		3	1			3	72	15	21	24		1	5	13	79
	TOT	0	3	2	0	0	2	87	0	4	1	0	0	3	86	19	25	26	0	1	7	16	94
JAN'89	MALE		1	1				22		1					23	5	6	4		1	1	7	24
	FEMALE		2	5	2		1	72	2	3	1	1			75	19	20	28	3		1	11	82
	TOT	0	3	6	2	0	1	94	2	4	1	1	0	0	98	24	26	32	3	1	2	18	106
AUG'89	MALE							24							24	6	8	6			1	3	24
	FEMALE	1	3	8			2	92	3	4	6			1	92	16	27	39		1	5	18	106
	TOT	1	3	8	0	0	2	116	3	4	6	0	0	1	116	22	35	45	0	1	6	21	130

ALL COHORTS- 1ST ATTEMPT GRADES
C - GENDER

START DATE	GENDER GROUP	APB1811LL							APB1812							APB1812L							TOTAL STUD.
		A	B	C	D	E	W	OTH	A	B	C	D	E	W	OTH	A	B	C	D	E	W	OTH	
JAN'88	MALE	3	4	7				7	4	4	8			2	3	7	2	4			3	5	21
	FEMALE	11	21	20			3	18	11	20	15			10	17	16	14	17			8	18	73
	TOT	14	25	27	0	0	3	25	15	24	23	0	0	12	20	23	16	21	0	0	11	23	94
AUG'88	MALE	2	6	1			3	3	4	2	5			1	3	3	4	3			1	4	15
	FEMALE	16	23	23		1	4	12	10	23	26			7	13	12	20	23			8	16	79
	TOT	18	29	24	0	1	7	15	14	25	31	0	0	8	16	15	24	26	0	0	9	20	94
JAN'89	MALE	5	5	5		1	2	6	4	7	4			3	6	4	5	7	1		2	5	24
	FEMALE	23	24	21			1	13	15	15	18		1	8	25	13	18	19			7	25	82
	TOT	28	29	26	0	1	3	19	19	22	22	0	1	11	31	17	23	26	1	0	9	30	106
AUG'89	MALE	4	9	3			2	6	9	9	5			1		4	11	4			1	4	24
	FEMALE	24	37	21			8	16	17	26	33			6	24	14	23	31		1	10	27	106
	TOT	28	46	24	0	0	10	22	26	35	38	0	0	7	24	18	34	35	0	1	11	31	130

ALL COHORTS- 1ST ATTEMPT GRADES
C - GENDER

START	GENDER	MCB2010							MCB2010L							SCIENCE GPA						TOTAL
DATE	GROUP	A	B	C	D	E	W	OTH	A	B	C	D	E	W	OTH	<2.0	2.0-2.5	2.51-3.0	3.01-3.5	>350	OTH	STUD.
JAN'88	MALE	4	3	10	1			3	6	8	4	1			2		9	4	2	4	2	21
	FEMALE	6	20	24			8	15	9	29	15			8	12		28	25	6	7	7	73
	TOT	10	23	34	1	0	8	18	15	37	19	1	0	8	14	0	37	29	8	11	9	94
AUG'88	MALE	1	6	2			1	5	2	6	1			1	5	2	4	4	1	4		15
	FEMALE	8	22	28	1		5	15	15	31	14	1		5	13	5	32	23	9	10		79
	TOT	9	28	30	1	0	6	20	17	37	15	1	0	6	18	7	36	27	10	14	0	94
JAN'89	MALE	2	8	4			4	6	6	5	3			4	6	1	6	8	3	4	2	24
	FEMALE	9	28	27			4	14	18	33	14			4	13	4	32	18	13	12	3	82
	TOT	11	36	31	0	0	8	20	24	38	17	0	0	8	19	5	38	26	16	16	5	106
AUG'89	MALE	6	8	4				6	6	9	2				7		6	4	6	7	1	24
	FEMALE	27	28	30			9	12	34	38	14			8	12	1	42	28	12	18	5	106
	TOT	33	36	34	0	0	9	18	40	47	16	0	0	8	19	1	48	32	18	25	6	130

APPENDIX VII

ALL COHORTS - FINAL GRADES
A - ETHNICITY

START DATE	ETHNIC GROUP	MGF1119 A	B	C	D	F	W	OTH	MGF1113 A	B	C	D	F	W	OTH	MATH GPA <2.0	2.0-2.5	2.51-3.0	3.01-3.5	>3.5	OTH	TOTAL STUD.
JAN'88	I	1													1					1		1
	B			3	1									1	3	1	3					4
	A	2	1												3			1		2		3
	H	1	1				1				1				2			1		1	1	3
	W	20	25	29	1	1	3	4	4	3	3	1		3	69	2	29	26		21	5	83
	F/OTHER																					0
	TOT	24	27	32	2	1	4	4	4	3	4	1	0	4	78	3	32	28	0	25	6	94
AUG'88	I																					0
	B	1	4	3			1	1		1	3				6		3	5		1	1	10
	A	1													1					1		1
	H			1								1					1					1
	W	24	19	32				7	1	2	11	2		2	64		36	20		25	1	82
	F/OTHER																					0
	TOT	26	23	36	0	0	1	8	1	3	14	3	0	2	71	0	40	25	0	27	2	94
JAN'89	I																					0
	B	1	2		1										4	1		2		1		4
	A		1	1											2		1	1				2
	H	1					1				2									1	1	2
	W	23	16	41	1		4	11	7	4	14	3	2		66	3	46	16		26	5	96
	F/OTHER	2													2					2		2
	TOT	27	19	42	2	0	5	11	7	4	16	3	2	0	74	4	47	19	0	30	6	106
AUG'89	I	1						1		1					1			1		1		2
	B	1	1		1			4	1	2	1	1			2	1		3		2	1	7
	A			1					1								1					1
	H		1					1			1				1			1			1	2
	W	13	22	21	1		2	59	15	18	40	1		3	41	2	50	37		25	4	118
	F/OTHER																					0
	TOT	15	24	22	2	0	2	65	17	21	42	2	0	3	45	3	51	42	0	28	6	130

ALL COHORTS - FINAL GRADES
A - ETHNICITY

START DATE	ETHNIC GROUP	REA9000 A	B	C	D	F	W	OTH	ENC1101 A	B	C	D	F	W	OTH	ENC1102 A	B	C	D	F	W	OTH	TOTAL STUD.
JAN'88	I							1		1												1	1
	B			3				1		2	2							3				1	4
	A	1	1	1					1		1				1	1	1					1	3
	H							3			2	1				1		2					3
	W	5	4	1			3	70	11	34	18	9		2	9	13	28	21	1		2	18	83
	F/OTHER																						0
	TOT	6	5	5	0	0	3	75	12	37	23	10	0	2	10	15	29	26	1	0	2	21	94
AUG'88	I																						0
	B			4				6	1	3	4				2	1	3	3			1	2	10
	A		1							1							1						1
	H							1			1							1					1
	W	3	7	1			1	70	16	27	21	3			15	14	28	18	4	1	2	15	82
	F/OTHER																						0
	TOT	3	8	5	0	0	1	77	17	31	26	3	0	0	17	15	32	22	4	1	3	17	94
JAN'89	I																						0
	B		2					2	1	1	1			1		2		2					4
	A			1				1		1	1					1	1						2
	H		1					1		1					1		1					1	2
	W	1	8	3	1			83	18	28	33	3		1	13	20	30	30	1	1	1	13	96
	F/OTHER	1						1		1					1	1						1	2
	TOT	2	11	4	1	0	0	88	19	32	35	3	0	2	15	24	32	32	1	1	1	15	106
AUG'89	I							2		1	1						1		1				2
	B			2	1		1	3	1	1	1			1	3		1	2	1			3	7
	A							1		1							1						1
	H							2			1				1		2						2
	W	4	5	3			1	105	18	44	32	2		5	17	20	41	32			3	22	118
	F/OTHER																						0
	TOT	4	5	5	1	0	2	113	19	47	35	2	0	6	21	20	46	34	2	0	3	25	130

ALL COHORTS - FINAL GRADES
A - ETHNICITY

START	ETHNIC	ENC1151							ENC1152							ENGLISH GPA						TOTAL
DATE	GROUP	A	B	C	D	F	W	OTH	A	B	C	D	F	W	OTH	<2.0	2.0-2.5	2.51-3.0	3.01-3.5	>3.5	OTH	STUD.
JAN'88	I		1						1										1			1
	B							4			1				3		4					4
	A		1					2		1					2		1	1		1		3
	H							3							3		3					3
	W	4	9	3				67	5	10				0	68	4	25	31	13	7	3	83
	F/OTHER																					0
	TOT	4	11	3	0	0	0	76	6	11	1	0	0	0	76	4	33	32	14	8	3	94
AUG'88	I																					0
	B		1	2				7		1	2				7		6	2	2			10
	A							1							1			1				1
	H							1							1		1					1
	W	7	7	2			1	65	7	6	3				66	4	27	22	15	12	2	82
	F/OTHER																					0
	TOT	7	8	4	0	0	1	74	7	7	5	0	0	0	75	4	34	25	17	12	2	94
JAN'89	I																					0
	B			1				3				1			3	1	1		1	1		4
	A							2							2		1		1			2
	H			1				1		1					1		1	1				2
	W	5	6	3				82	4	9		1			82	4	41	24	10	16	1	96
	F/OTHER	1						1	1						1				1	1		2
	TOT	6	6	5	0	0	0	89	5	10	0	2	0	0	89	5	44	25	13	18	1	106
AUG'89	I							2							2	1		1				2
	B		1	2	1			3		1	1	1			4	2	3	2				7
	A							1							1			1				1
	H			1				1		1					1		1	1				2
	W	5	12	6		1	2	92	6	9	6	1			96	2	47	33	23	10	3	118
	F/OTHER																					0
	TOT	5	13	9	1	1	2	99	6	11	7	2	0	0	104	5	51	38	23	10	3	130

ALL COHORTS - FINAL GRADES
A - ETHNICITY

START DATE	ETHNIC GROUP	APB1190 A	B	C	D	F	W	OTH	APB1190L A	B	C	D	F	W	OTH	APB1811 A	B	C	D	F	W	OTH	TOTAL STUD.
JAN'88	I			1							1						1						1
	B			1				3			1				3			4					4
	A							3							3	1	2						3
	H			1				2			1				2		2	1					3
	W	1	6	4	1			71	2	5	5				71	13	25	35			1	9	83
	F/OTHER																						0
	TOT	1	6	7	1	0	0	79	2	5	8	0	0	0	79	14	30	40	0	0	1	9	94
AUG'88	I																						0
	B				1			9						1	9	1	2	3				4	10
	A							1							1			1					1
	H							1							1			1					1
	W		4	2			1	75		4	2			1	75	18	26	31	1	1		5	82
	F/OTHER																						0
	TOT	0	4	2	1	0	1	86	0	4	2	0	0	2	86	19	28	36	1	1	0	9	94
JAN'89	I																						0
	B							4							4	1		2				1	4
	A							2							2			2					2
	H							2							2			2					2
	W		3	6	2		1	84	2	4	2	1			87	22	27	40	3	1		3	96
	F/OTHER							2							2	1		1					2
	TOT	0	3	6	2	0	1	94	2	4	2	1	0	0	97	24	27	47	3	1	0	4	106
AUG'89	I							2							2		1					1	2
	B			1				6			1				6		1	4		1	1		7
	A							1							1			1					1
	H			1				1	1						1			1				1	2
	W	2	4	7			1	104	2	5	5				106	22	37	51			1	7	118
	F/OTHER																						0
	TOT	2	4	9	0	0	1	114	3	5	6	0	0	0	116	22	39	57	0	1	2	9	130

ALL COHORTS - FINAL GRADES
A - ETHNICITY

START DATE	ETHNIC GROUP	APB1811LL A	B	C	D	F	W	OTH	APB1812 A	B	C	D	F	W	OTH	APB1812L A	B	C	D	F	W	OTH	TOTAL STUD.
JAN'88	I		1						1							1							1
	B		1	3					1		3					1		3					4
	A		2	1						2	1					2	1						3
	H			3					1	1	1						1	2					3
	W	14	24	34	1		1	9	13	24	38			1	6	1	23	16	37			6	1	83
	F/OTHER																							0
	TOT	14	28	41	1	0	1	9	16	27	43	0	1	6	1	27	18	42	0	0	6	1	94
AUG'88	I																						0
	B	1	2	5				2	1	1	6			2		1	2	5			2		10
	A		1							1							1						1
	H		1								1							1					1
	W	18	27	30	1	1	1	4	14	25	41			1	1	18	25	36		2	1		82
	F/OTHER																						0
	TOT	19	31	35	1	1	1	6	15	27	48	0	0	3	1	19	28	42	0	2	3	0	94
JAN'89	I																						0
	B		1	2				1	1		2			1		1		2			1		4
	A		1	1				0			2							2					2
	H			2						1	1						1	1					2
	W	27	29	36		1		3	18	28	47			1	1	1	18	26	48	1	1	1	1	96
	F/OTHER	1	1						1	1								1	1				2
	TOT	28	32	41	0	1	0	4	20	30	52	0	1	2	1	19	28	54	1	1	2	1	106
AUG'89	I		1					1															2
	B		2	4			1		1					1			1				1		7
	A	1								1	6						1	5	1				1
	H			1				1		1						1							2
	W	27	49	34			1	7			2							2					118
	F/OTHER								26	33	55			4		18	42	53		2	3		0
	TOT	28	52	39	0	0	2	9	27	35	63	0	0	5	0	19	44	60	1	2	4	0	130

ALL COHORTS - FINAL GRADES
A - ETHNICITY

START DATE	ETHNIC GROUP	MCB2010 A	B	C	D	E	W	OTH	MCB2010L A	B	C	D	E	W	OTH	SCIENCE GPA <2.0	2.0-2.5	2.51-3.0	3.01-3.5	>350	OTH	TOTAL STUD.
JAN'88	I			1						1								1				1
	B			3				1			3				1		3	1				4
	A		2	1						2	1						1	1	1			3
	H			3						1	2						1	2				3
	W	12	25	34	1		1	10	19	37	15	1		1	10		40	20	4	12	7	83
	F/OTHER																					0
	TOT	12	27	42	1	0	1	11	19	41	21	1	0	1	11	0	45	25	5	12	7	94
AUG'88	I																					0
	B	1	3	4				2	2	3	3				2	1	4	2		1	2	10
	A			1							1						1					1
	H			1							1						1					1
	W	8	28	34	1			11	15	39	16	1			11	2	38	21	6	13	2	82
	F/OTHER																					0
	TOT	9	31	40	1	0	0	13	17	42	21	1	0	0	13	3	44	23	6	14	4	94
JAN'89	I																					0
	B		1	2				1		1	2				1		2			1	1	4
	A			2					1		1						2					2
	H		1	1						2							2					2
	W	11	38	33			1	13	24	39	18			1	14	4	40	29	8	13	2	96
	F/OTHER			1				1		1					1		1			1		2
	TOT	11	40	39	0	0	1	15	25	43	21	0	0	1	16	4	47	29	8	15	3	106
AUG'89	I		1					1		1					1				1		1	2
	B			5				2		1	4				2	1	6					7
	A		1						1									1				1
	H			2						1	1						2					2
	W	33	37	35	1			12	39	46	21				12	1	45	34	13	22	3	118
	F/OTHER																					0
	TOT	33	39	42	1	0	0	15	40	49	26	0	0	0	15	2	53	35	14	22	4	130

ALL COHORTS - FINAL GRADES
B - AGE

START DATE	AGE GROUP	MGF1119 A	B	C	D	F	W	OTH	MGF1113 A	B	C	D	F	W	OTH	MATH GPA <2.0	2.0-2.5	2.51-3.0	3.01-3.5	>3.5	OTH	TOTAL STUD.
JAN'88	19&UNDER	3	4	3	1		1				2				10	1	3	4		3	1	12
	20-24	7	7	9		1	1	1		1	1				24	1	9	7		7	2	26
	25-29	6	6	7				2	1	2				2	16		7	7		6	1	21
	30-39	6	5	8			2	1	3		1	1		1	16		8	5		7	2	22
	40-49	2	4	5	1									1	11	1	5	4		2		12
	50-59		1												1			1				1
	TOT	24	27	32	2	1	4	4	4	3	4	1	0	4	78	3	32	28	0	25	6	94
AUG'88	19&UNDER	2	2	2				1			1				6		3	2		2		7
	20-24	5	7	3			1	1			4				13		4	7		5	1	17
	25-29	3	8	17				3		2	3	1		1	24		19	9		3		31
	30-39	7	4	10				1			4	2		1	15		10	4		7	1	22
	40-49	7	2	4				2	1	1	1				12		4	3		8		15
	50-59	2									1				1					2		2
	TOT	26	23	36	0	0	1	8	1	3	14	3	0	2	71	0	40	25	0	27	2	94
JAN'89	19&UNDER	2	2	3			1			1	3				4		3	2		2	1	8
	20-24	3	7	8			1	4	1	1	5				16		11	7		4	1	23
	25-29	5	7	11	1		1	3			5	2			21	2	12	7		5	2	28
	30-39	16	3	11			1	1	3	2	2	1			24		12	3		16	1	32
	40-49	1		8	1		1	3	3		1		2		8	2	8			3	1	14
	50-59			1											1		1					1
	TOT	27	19	42	2	0	5	11	7	4	16	3	2	0	74	4	47	19	0	30	6	106
AUG'89	19&UNDER		3	3				2	1		1				6		4	3		1		8
	20-24	6	5	6				9	2	3	8	1			12	1	9	8		8		26
	25-29	2	7	3			2	16	3	5	11			1	10		10	11		4	5	30
	30-39	3	9	8	1			24	8	8	14			1	14	1	20	15		9		45
	40-49	3		2	1			12	1	5	7	1		1	3	1	8	5		3	1	18
	50-59	1						2	2		1									3		3
	TOT	15	24	22	2	0	2	65	17	21	42	2	0	3	45	3	51	42	0	28	6	130

ALL COHORTS - FINAL GRADES
B - AGE

START DATE	AGE GROUP	REA9000 A	B	C	D	F	W	OTH	ENC1101 A	B	C	D	F	W	OTH	ENC1102 A	B	C	D	F	W	OTH	TOTAL STUD.
JAN'88	19&UNDER	1		2				9	3	3	4	1			1	2	3	4				3	12
	20-24	2	1				1	22	1	12	6	2			5	3	8	6			2	7	26
	25-29	1	2	1			1	16	4	8	4	1		2	2	3	6	6				6	21
	30-39	2	1	1				18	4	8	3	6			1	4	9	5	1			3	22
	40-49		1	1			1	9		6	5				1	3	3	4				2	12
	50-59							1			1							1					1
	TOT	6	5	5	0	0	3	75	12	37	23	10	0	2	10	15	29	26	1	0	2	21	94
AUG'88	19&UNDER		1					6	1	3	2				1	1	2	2				2	7
	20-24	1	1	1			1	13	2	7	7				1	5	6	3		1	1	1	17
	25-29	1	5	1				24	3	8	11	1			8	3	9	8	3		1	7	31
	30-39			2				20	7	8	5	1			1	3	10	6	1			2	22
	40-49		1	1				13	4	4	1	1			5	3	4	2			1	5	15
	50-59	1						1		1					1		1	1					2
	TOT	3	8	5	0	0	1	77	17	31	26	3	0	0	17	15	32	22	4	1	3	17	94
JAN'89	19&UNDER		1					7		1	3	1			3	1	4	1				2	8
	20-24	1	3	1				18	4	7	11			1		4	7	9	1			2	23
	25-29	1	2	1				24	3	8	9	2		1	5	3	10	9		1	1	4	28
	30-39		3	2				27	10	8	9				5	12	8	7				5	32
	40-49		1		1			12	2	7	3				2	4	3	5				2	14
	50-59		1							1								1					1
	TOT	2	11	4	1	0	0	88	19	32	35	3	0	2	15	24	32	32	1	1	1	15	106
AUG'89	19&UNDER							8	2	2	2				2	1	5					2	8
	20-24	1	1	2			1	21	3	10	7	1			5	2	10	8	1		1	4	26
	25-29	1	1	2			1	25	3	10	8			3	6	4	6	10			2	8	30
	30-39	1	2	1				41	6	18	12	1		3	5	9	17	11				8	45
	40-49		1		1			16	4	7	4				3	4	8	3	1			2	18
	50-59	1						2	1		2							2				1	3
	TOT	4	5	5	1	0	2	113	19	47	35	2	0	6	21	20	46	34	2	0	3	25	130

ALL COHORTS - FINAL GRADES
B - AGE

START DATE	AGE GROUP	ENC1151 A	B	C	D	F	W	OTH	ENC1152 A	B	C	D	F	W	OTH	ENGLISH GPA <2.0	2.0-2.5	2.51-3.0	3.01-3.5	>3.5	OTH	TOTAL STUD.
JAN'88	19&UNDER			1				11	1		1				10		6	3		2	1	12
	20-24	2	4	1				19	2	5					19	1	7	12	4	1	1	26
	25-29	1	4	1				15	2	2					17		7	7	4	2	1	21
	30-39		2					20	1	2					19	3	6	8	2	3		22
	40-49	1	1					10		2					10		6	2	4			12
	50-59							1							1		1					1
	TOT	4	11	3	0	0	0	76	6	11	1	0	0	0	76	4	33	32	14	8	3	94
AUG'88	19&UNDER		1					6	1						6		3	2	1	1		7
	20-24	1	1				1	14	2	1					14		8	2	5	2		17
	25-29	3	3	2				23	2	2	4				23	3	12	9	3	3	1	31
	30-39		1	2				19		2	1				19		10	5	6	1		22
	40-49	2	2					11	1	2					12	1	1	6	1	5	1	15
	50-59	1						1	1						1			1	1			2
	TOT	7	8	4	0	0	1	74	7	7	5	0	0	0	75	4	34	25	17	12	2	94
JAN'89	19&UNDER	1	1	1				5	2	1					5		5	1		2		8
	20-24			1				22							23	1	11	6	3	1	1	23
	25-29	3	2	1				22	2	4		1			21	3	11	7	3	4		28
	30-39	1	2	2				27		4		1			27	1	10	7	6	8		32
	40-49	1	1					12	1	1					12		6	4	1	3		14
	50-59							1							1		1					1
	TOT	6	6	5	0	0	0	89	5	10	0	2	0	0	89	5	44	25	13	18	1	106
AUG'89	19&UNDER		2					6		2					6		1	5	2			8
	20-24	2		3			1	20	1	1	3				21	1	13	6	4	1	1	26
	25-29		3	3	1	1	1	21	1	2	1	2			24	3	13	7	4	1	2	30
	30-39	2	6	1				36	2	4	2				37	1	16	15	8	5		45
	40-49	1	2	1				14	1	2	1				14		6	5	4	3		18
	50-59			1				2	1						2		2		1			3
	TOT	5	13	9	1	1	2	99	6	11	7	2	0	0	104	5	51	38	23	10	3	130

ALL COHORTS - FINAL GRADES
B - AGE

START DATE	AGE GROUP	APB1190 A	B	C	D	F	W	OTH	APB1190L A	B	C	D	F	W	OTH	APB1811 A	B	C	D	F	W	OTH	TOTAL STUD.
JAN'88	19&UNDER		1					11			1				11	1	5	4			1	1	12
	20-24		1	1	1			23		2	1				23	3	9	10				4	26
	25-29	1	1	3				16	2	1	2				16	4	5	10				2	21
	30-39		1	1				20		1	1				20	4	7	9				2	22
	40-49		2	2				8		1	3				8	1	4	7					12
	50-59							1							1	1							1
	TOT	1	6	7	1	0	0	79	2	5	8	0	0	0	79	14	30	40	0	0	1	9	94
AUG'88	19&UNDER							7							7		2	4				1	7
	20-24						1	16						1	16	4	7	5				1	17
	25-29		2		1			28		2				1	28	4	8	15				4	31
	30-39		1	1				20		1	1				20	4	5	11	1			1	22
	40-49		1	1				13		1	1				13	5	6	3		1			15
	50-59							2							2	2							2
	TOT	0	4	2	1	0	1	86	0	4	2	0	0	2	86	19	28	38	1	1	0	7	94
JAN'89	19&UNDER							8							8	1	1	4	1			1	8
	20-24			2	2			19		2	1	1			19	3	5	15					23
	25-29		1	2				25	1	2					25	4	9	13				2	28
	30-39		2	1			1	28	1						31	9	10	10	2			1	32
	40-49			1				13			1				13	7	1	5		1			14
	50-59							1							1		1						1
	TOT	0	3	6	2	0	1	94	2	4	2	1	0	0	97	24	27	47	3	1	0	4	106
AUG'89	19&UNDER							8							8		1	7					8
	20-24			1				25							26	4	6	15				1	26
	25-29			5				25	1	1	3				25	3	11	10		1	1	4	30
	30-39	2	4	2			1	36	2	4	2				37	10	14	19				2	45
	40-49							18							18	4	6	5			1	2	18
	50-59			1				2			1				2	1	1	1					3
	TOT	2	4	9	0	0	1	114	3	5	6	0	0	0	116	22	39	57	0	1	2	9	130

ALL COHORTS - FINAL GRADES

B - AGE

START DATE	AGE GROUP	APB1811LL A	B	C	D	F	W	OTH	APB1812 A	B	C	D	F	W	OTH	APB1812L A	B	C	D	F	W	OTH	TOTAL STUD.
JAN'88	19&UNDER	2	3	5			1	1	1	4	6			1		3	4	4			1		12
	20-24	4	12	6				4	3	8	11		1	2	1	7	3	12			3	1	26
	25-29	3	4	11	1			2	5	4	11			1		5	5	10			1		21
	30-39	2	7	11				2	3	8	9			2		7	3	11			1		22
	40-49	2	2	8					3	3	6					4	3	5					12
	50-59	1							1							1							1
	TOT	14	28	41	1	0	1	9	16	27	43	0	1	6	1	27	18	42	0	0	6	1	94
AUG'88	19&UNDER	2	3	1				1		2	4			1			3	3			1		7
	20-24	4	4	8				1	5	3	8			1		5	5	6			1		17
	25-29	2	11	14				4	1	13	16			1		3	9	17		2			31
	30-39	2	8	10	1		1		3	5	13				1	3	7	11			1		22
	40-49	8	4	2		1			5	3	7					6	4	5					15
	50-59	1	1						1	1						2							2
	TOT	19	31	35	1	1	1	6	15	27	48	0	0	3	1	19	28	42	0	2	3	0	94
JAN'89	19&UNDER	1	1	5				1		3	5						1	6		1			8
	20-24	4	9	10					1	9	13					1	7	15					23
	25-29	5	11	10				2	4	5	17		1	1		4	7	15			2		28
	30-39	13	7	11				1	11	10	10				1	11	10	10				1	32
	40-49	5	3	5		1			4	2	7			1		3	3	7	1				14
	50-59		1							1								1					1
	TOT	28	32	41	0	1	0	4	20	30	52	0	1	2	1	19	28	54	1	1	2	1	106
AUG'89	19&UNDER		4	4						1	7					1	3	4					8
	20-24	5	12	8				1	4	6	15			1		4	8	13			1		26
	25-29	5	10	10			1	4	4	7	17			2		1	11	15		2	1		30
	30-39	12	18	13				2	11	13	20			1		6	15	23			1		45
	40-49	4	8	3			1	2	6	8	3			1		5	7	4	1		1		18
	50-59	2		1					2		1					2		1					3
	TOT	28	52	39	0	0	2	9	27	35	63	0	0	5	0	19	44	60	1	2	4	0	130

ALL COHORTS - FINAL GRADES
B - AGE

START DATE	AGE GROUP	MCB2010 A	B	C	D	F	W	OTH	MCB2010L A	B	C	D	F	W	OTH	SCIENCE GPA <2.0	2.0-2.5	2.51-3.0	3.01-3.5	>350	OTH	TOTAL STUD.
JAN'88	19&UNDER	1	1	7				3	1	4	4				3		7	3		1	1	12
	20-24	4	4	14			1	3	6	12	4			1	3		14	5	1	3	3	26
	25-29	1	11	6				3	4	10	4				3		9	7	2	2	1	21
	30-39	3	8	8	1			2	5	10	4	1			2		9	6	2	3	2	22
	40-49	2	3	7					2	5	5						6	4		2		12
	50-59	1							1											1		1
	TOT	12	27	42	1	0	1	11	19	41	21	1	0	1	11	0	45	25	5	12	7	94
AUG'88	19&UNDER		1	5				1		4	2				1		4	2			1	7
	20-24	3	5	7				2	7	5	3				2		7	4	2	3	1	17
	25-29		9	15				7	3	13	8				7	1	18	9	1	1	1	31
	30-39	1	8	11	1			1	4	9	7	1			1	1	11	5	1	3	1	22
	40-49	4	7	2				2	3	9	1				2	1	4	3	2	5		15
	50-59	1	1							2										2		2
	TOT	9	31	40	1	0	0	13	17	42	21	1	0	0	13	3	44	23	6	14	4	94
JAN'89	19&UNDER		2	4				2		4	2				2	1	5	2				8
	20-24	1	4	14				4	3	10	6				4	2	14	6		1		23
	25-29	3	9	11				5	4	14	5				5		15	7	1	3	2	28
	30-39	5	18	6			1	2	13	12	3			1	3	1	8	11	5	7		32
	40-49	2	7	3				2	5	3	4				2		5	2	2	4	1	14
	50-59			1							1							1				1
	TOT	11	40	39	0	0	1	15	25	43	21	0	0	1	16	4	47	29	8	15	3	106
AUG'89	19&UNDER	3	3	1				1	3	3	1				1		5	2	1			8
	20-24	5	7	10	1			3	4	15	4				3	1	14	5	1	4	1	26
	25-29	6	10	9				5	10	9	6				5	1	13	8	2	5	1	30
	30-39	12	11	21				1	16	14	14				1		18	11	8	7	1	45
	40-49	5	7	1				5	5	7	1				5		2	9	2	4	1	18
	50-59	2	1						2	1							1			2		3
	TOT	33	39	42	1	0	0	15	40	49	26	0	0	0	15	2	53	35	14	22	4	130

ALL COHORTS - FINAL GRADES
C - GENDER

START		MGF1119							MGF1113							MATH GPA						TOTAL
DATE	GENDER	A	B	C	D	F	W	OTH	A	B	C	D	F	W	OTH	<2.0	2.0-2.5	2.51-3.0	3.01-3.5	>3.5	OTH	STUD.
JAN'88	MALE	5	4	9			1	2	4		1	1			15		9	4		6	2	21
	FEMALE	19	23	23	2	1	3	2		3	3			4	63	3	23	24		19	4	73
	TOT	24	27	32	2	1	4	4	4	3	4	1	0	4	78	3	32	28	0	25	6	94
AUG'88	MALE	1	4	7				3	1	1				2	11		7	5		2	1	15
	FEMALE	25	19	29			1	5		2	14	3		0	60		33	20		25	1	79
	TOT	26	23	36	0	0	1	8	1	3	14	3	0	2	71	0	40	25	0	27	2	94
JAN'89	MALE	7	4	9	1		2	1	1		3	2	2	0	16	2	9	4		7	2	24
	FEMALE	20	15	33	1		3	10	6	4	13	1		0	58	2	38	15		23	4	82
	TOT	27	19	42	2	0	5	11	7	4	16	3	2	0	74	4	47	19	0	30	6	106
AUG'89	MALE	1	3	2			1	17	3	3	11			1	6		13	6		3	2	24
	FEMALE	14	21	20	2		1	48	14	18	31	2		2	39	3	38	36		25	4	106
	TOT	15	24	22	2	0	2	65	17	21	42	2	0	3	45	3	51	42	0	28	6	130

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ALL COHORTS - FINAL GRADES
C - GENDER

START DATE	GENDER GROUP	REA9000 A	B	C	D	F	W	OTH	ENC1101 A	B	C	D	F	W	OTH	ENC1102 A	B	C	D	F	W	OTH	TOTAL STUD.
JAN'88	MALE	1	1	1			1	17	2	6	7	5		0	1	3	6	7	1		0	4	21
	FEMALE	5	4	4			2	58	10	31	16	5		2	9	12	23	19			2	17	73
	TOT	6	5	5	0	0	3	75	12	37	23	10	0	2	10	15	29	26	1	0	2	21	94
AUG'88	MALE		1					14	4	4	4	1			2	2	7	2	2		0	2	15
	FEMALE	3	7	5			1	63	13	27	22	2		0	15	13	25	20	2	1	3	15	79
	TOT	3	8	5	0	0	1	77	17	31	26	3	0	0	17	15	32	22	4	1	3	17	94
JAN'89	MALE		1	1	1			21	2	6	9	2		2	3	4	7	7	1	1	0	4	24
	FEMALE	2	10	3				67	17	26	26	1		0	12	20	25	25			1	11	82
	TOT	2	11	4	1	0	0	88	19	32	35	3	0	2	15	24	32	32	1	1	1	15	106
AUG'89	MALE	1		1				22	3	9	8			0	4	6	3	11			0	4	24
	FEMALE	3	5	4	1		2	91	16	38	27	2		6	17	14	43	23	2		3	21	106
	TOT	4	5	5	1	0	2	113	19	47	35	2	0	6	21	20	46	34	2	0	3	25	130

ALL COHORTS - FINAL GRADES
C - GENDER

START	GENDER	ENC1151							ENC1152							ENGLISH GPA						TOTAL
DATE	GROUP	A	B	C	D	F	W	OTH	A	B	C	D	F	W	OTH	<2.0	2.0-2.5	2.51-3.0	3.01-3.5	>3.5	OTH	STUD.
JAN'88	MALE	1	1	1				18	1	3					17	4	8	4	4	2	0	21
	FEMALE	3	10	2			0	58	5	8	1			0	59	0	25	28	10	6	3	73
	TOT	4	11	3	0	0	0	76	6	11	1	0	0	0	76	4	33	32	14	8	3	94
AUG'88	MALE		1					14		1					14	3	2	5	2	2	1	15
	FEMALE	7	7	4			1	60	7	6	5			0	61	1	32	20	15	10	1	79
	TOT	7	8	4	0	0	1	74	7	7	5	0	0	0	75	4	34	25	17	12	2	94
JAN'89	MALE		1	3				20		3		2			19	5	9	5	3	1	1	24
	FEMALE	6	5	2				69	5	7					70		35	20	10	17	0	82
	TOT	6	6	5	0	0	0	89	5	10	0	2	0	0	89	5	44	25	13	18	1	106
AUG'89	MALE	1		2			1	20	1	1	1			0	21		14	2	4	3	1	24
	FEMALE	4	13	7	1	1	1	79	5	10	6	2		0	83	5	37	36	19	7	2	106
	TOT	5	13	9	1	1	2	99	6	11	7	2	0	0	104	5	51	38	23	10	3	130

ALL COHORTS - FINAL GRADES
C - GENDER

START DATE	GENDER GROUP	APB1190 A	B	C	D	F	W	OTH	APB1190L A	B	C	D	F	W	OTH	APB1811 A	B	C	D	F	W	OTH	TOTAL STUD.
JAN'88	MALE		2					19	1		1				19	4	9	6				2	21
	FEMALE	1	4	7	1		0	60	1	5	7			0	60	10	21	34			1	7	73
	TOT	1	6	7	1	0	0	79	2	5	8	0	0	0	79	14	30	40	0	0	1	9	94
AUG'88	MALE		1					14		1					14	4	4	3	1		0	3	15
	FEMALE		3	2	1		1	72		3	2			2	72	15	24	35		1	0	4	79
	TOT	0	4	2	1	0	1	86	0	4	2	0	0	2	86	19	28	38	1	1	0	7	94
JAN'89	MALE		1	1				22		1					23	5	6	11		1	0	1	24
	FEMALE		2	5	2		1	72	2	3	2	1			74	19	21	36	3		0	3	82
	TOT	0	3	6	2	0	1	94	2	4	2	1	0	0	97	24	27	47	3	1	0	4	106
AUG'89	MALE							24							24	6	8	6			1	3	24
	FEMALE	2	4	9			1	90	3	5	6			0	92	16	31	51		1	1	6	106
	TOT	2	4	9	0	0	1	114	3	5	6	0	0	0	116	22	39	57	0	1	2	9	130

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ALL COHORTS - FINAL GRADES
C - GENDER

START DATE	GENDER GROUP	APB1811LL							APB1812							APB1812L							TOTAL STUD.
		A	B	C	D	E	W	OTH	A	B	C	D	E	W	OTH	A	B	C	D	E	W	OTH	
JAN'88	MALE	3	5	11				2	4	4	11		1	1		7	2	10			2		21
	FEMALE	11	23	30	1		1	7	12	23	32			5	1	20	16	32			4	1	73
	TOT	14	28	41	1	0	1	9	16	27	43	0	1	6	1	27	18	42	0	0	6	1	94
AUG'88	MALE	2	6	3	1		1	2	4	2	7			1	1	3	5	5		1	1		15
	FEMALE	17	25	32		1	0	4	11	25	41			2		16	23	37		1	2		79
	TOT	19	31	35	1	1	1	6	15	27	48	0	0	3	1	19	28	42	0	2	3	0	94
JAN'89	MALE	5	6	11		1		1	4	8	10			2		4	6	12	1		1		24
	FEMALE	23	26	30				3	16	22	42		1	0	1	15	22	42		1	1	1	82
	TOT	28	32	41	0	1	0	4	20	30	52	0	1	2	1	19	28	54	1	1	2	1	106
AUG'89	MALE	4	10	6			1	3	9	9	6					5	12	6		1			24
	FEMALE	24	42	33			1	6	18	26	57			5		14	32	54	1	1	4		106
	TOT	28	52	39	0	0	2	9	27	35	63	0	0	5	0	19	44	60	1	2	4	0	130

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ALL COHORTS - FINAL GRADES
C - GENDER

START	GENDER	MCB2010							MCB2010L							SCIENCE GPA						TOTAL
DATE	GROUP	A	B	C	D	E	W	OTH	A	B	C	D	E	W	OTH	<2.0	2.0-2.5	2.51-3.0	3.01-3.5	>350	OTH	STUD.
JAN'88	MALE	4	4	10	1			2	6	8	4	1			2		11	3	1	4	2	21
	FEMALE	8	23	32			1	9	13	33	17			1	9		34	22	4	8	5	73
	TOT	12	27	42	1	0	1	11	19	41	21	1	0	1	11	0	45	25	5	12	7	94
AUG'88	MALE	1	7	3				4	2	6	3				4	1	5	2	1	4	2	15
	FEMALE	8	24	37	1			9	15	36	18	1			9	2	39	21	5	10	2	79
	TOT	9	31	40	1	0	0	13	17	42	21	1	0	0	13	3	44	23	6	14	4	94
JAN'89	MALE	2	10	6			1	5	6	7	5			1	5	0	10	6	3	3	2	24
	FEMALE	9	30	33				10	19	36	16				11	4	37	23	5	12	1	82
	TOT	11	40	39	0	0	1	15	25	43	21	0	0	1	16	4	47	29	8	15	3	106
AUG'89	MALE	6	8	4				6	6	9	3				6		7	6	4	7		24
	FEMALE	27	31	38	1			9	34	40	23				9	2	46	29	10	15	4	106
	TOT	33	39	42	1	0	0	15	40	49	26	0	0	0	15	2	53	35	14	22	4	130

APPENDIX VIII

CORRELATION MATRIX FOR PASSING EXAM MODEL
PREDICTOR VARIABLES

VAR	NAME	MC2010L	PRE-ADMISS. CRED. HRS.	HS/COLL GPA	MAPS MATH	MAPS READING	MATH. GPA
X1	MC2010L-FINA	1					
X2	PREAD CH	0.13	1				
X3	HS/COLL GPA	0.33	-0.19	1			
X4	MAPSMATH	0.21	0.01	0.15	1		
X5	MAPSREAD	0.28	0.21	0.21	0.25	1	
X6	MATH. GPA	0.36	-0.13	0.36	0.22	0.2	1

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Y= .51+ .02 (MAPS READING SCORE) +.15 (MCB2010L-FINAL GRADE)

[Y>=1.50 = PASS]

[Y<1.50=FAIL]

[A=4]
[B=3]
[C=2]
[D=1]
[F=0]

N=69 OF 294 TOTAL CASES

APPENDIX IX

CORRELATION MATRIX FOR # SEMESTERS MODEL
PREDICTOR VARIABLES

VAR	NAME	HS OR COLL. ORIGIN?	MAPS READING	MAPS MATH	PRE-ADMISS. CREDIT HOURS	APB1812	APB1811L	MATH GPA	TRANS. OR NAT.?
X1	H S OR COLLEGE ORIGIN	1							
X2	MAPS READING	0.07	1						
X3	MAPS MATH	-0.08	0.28	1					
X4	PRE-ADMISS. CRED. HRS.	-0.28	0.19	0.003	1				
X5	APB1812 -FINAL GRADE	-0.01	0.12	0.002	0.16	1			
X6	APB1811L-FINAL GRADE	-0.06	0.2	0.19	0.09	0.37	1		
X7	MATH GPA-FINAL GRADES	0.03	0.31	0.26	-0.12	0.27	0.39	1	
X8	TRANSFER OR NATIVE?	-0.17	0.19	0.003	0.4	-0.09	0.02	-0.02	1

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Y= 5.03-.26 (HIGH SCHOOL OR COLLEGE ORIGIN) -.15 (APB1811L-FINAL GRADE) -.15 (APB1812-FINAL GRADE)

[Y<4.45=4 SEM.]	[HS=1]	[A=4]	[A=4]
[Y>=4.45=5 OR MORE]	[COLLEGE=0]	[B=3]	[B=3]
		[C=2]	[C=2]
		[D=1]	[D=1]
		[F=0]	[F=0]

N=69 OF 294 TOTAL CASES